Nebraska Legislative Council
Committee Report No. 37

Report of the Nebraska Legislative Council Committee on Highways

July, 1952

Lincoln, Nebraska
November 13, 1952

TO THE MEMBERS OF THE LEGISLATURE
OF THE STATE OF NEBRASKA

Gentlemen:

Legislative Resolution No. 16, adopted by the Legislature during the 1951 session, directed the Legislative Council to study Nebraska's road problems and highway system, as well as methods used in other states for financing highways. The report which is submitted herewith was made in accordance with that resolution.

The report was prepared under the direction of a committee which consisted of Senators Karl E. Vogel, chairman; Hal Bridenbaugh, J. L. Brown, Hugh Carson, Sam E. Klaver, C. R. Lindgren, and Charles Wilson. It was submitted to and approved by the Legislative Council at its general meeting on November 13, 1952.

Respectfully submitted

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COMMITTEE ON HIGHWAYS

Authorized by the 62nd Legislature's Resolution No. 16 to study:

A. NEBRASKA'S ROAD PROBLEM

B. MOTOR VEHICLE TAXATION

C. TOLL ROADS

D. THE DEPARTMENT OF ROADS AND IRRIGATION

COMMITTEE

Senator Sam E. Klaver
Senator C. R. Lindgren
Senator Hal Bridenbaugh
Senator Charles Wilson
Senator J. L. Brown
Senator Hugh Carson
Senator Karl E. Vogel, Chairman

Foreword

The story of the development of highways in America from the narrow trail of the Indian through the primeval forest to the magnificent multiple lane paved highways of today is one of continued growth, utility and importance. Adequate highways are now a prime essential in our economic system and way of living. They tie the nation together and bind it into a unified whole. They furnish lanes of communication and for the transfer of commoditie between communities, and they provide access to the farms beyond. They facili tate recreational, social and business activities. Home life in America has been revolutionized by the family car, and distant places are no longer just names on the map to the average American. An adequate system of highways is a necessity and the responsibility for its construction and maintenance is recognized as being an obligation of the federal, state, and local governments.

It is an obligation of growing importance and responsibility. Americans are becoming more and more travel-minded. Cars bearing the license plates of almost every state in the Union can be seen on our highways every day in the year. Our economic system is becoming more and more dependent upon the speed and flexibility offered by truck transportation. More and more communities are without railroads or are subject to curtailed rail service and dependent upon trucking facilities.

It is an obligation of rapidly increasing magnitude. A spectacular increase in the production of motor vehicles has been followed by an even more spectacular increase in traffic density upon our highways. The number of automotive vehicles in the nation increased from about 8,000 in 1900 to over 50 million today, there having been an increase of over 20 million in the last six years. In the years between 1941 and 1951, the population of the nation increased from about 130 million to 150 million, an increase of about 16%, while in the same decade the number of motor vehicles produced each year in the nation increased from 5.1 million to 8.6 million, an increase of about 68%.

In 1904 there were about 153,530 miles of rural roads in the entire nation which had some type of surfacing. Today there are more than 1,573,000 miles. In 1920 there were not to exceed 15 miles of paved rural highways in Nebraska, while as of today, the state has built and maintains 4,355 miles of paved rural highways out of a total mileage of nearly 9,600 miles included in the present state highway system.

It was only about 50 years ago that the speed of the automobile was generally limited to 6 miles per hour. Knoxville, Tennessee, required all automobiles to be equipped with water tanks and sprinkling apparatus to lay the dust they raised. In Missouri, the motorist had to have a special permit for every county in which he traveled. Newark, New Jersey, required a watchman to precede two blocks in advance of every motor vehicle using the highways. In 1920 gasoline had an octane content

of 55 and cost 31 cents per gallon at the distillery, and today it has an 85 octane rating and costs about 14 cents at the distillery, exclusive of tax. The remarkable development of the automobile and of our system of roads is a typically American achievement that could not have happened anywhere else in the world.

It is an obligation of ever-growing expense. The modern automotive vehicle demands a modern highway. The modern highway requires increased load-carrying capacity, increased width, larger radius curves and lower grades, longer sight distances, sand lift foundations, additional safety features, and the practicable elimination of grade crossings, all of which, together with the inflated cost of labor and material, make the cost per mile of an adequate highway two or three times as great today as it was ten years ago.

Twelve to fifteen years ago, during an extended drouth period, because of the constant pressure for dustless surfaces, the State of Nebraska built many miles of bituminous roads with only a light surface treatment as the initial step in the construction of an adequate surface. Due to the war restrictions on highway construction, these roads were not completed as originally planned. To complete the surfacing of these roads so as to be adequate for present loads and traffic would require an expenditure three to five times that originally made. In addition, many miles of rigid type pavement constructed over twenty years ago have reached or passed the average life span of concrete pavement in Nebraska. As a result, a large portion of the money now available must be expended for maintenance and replacements.

In 1949, the nation constructed about 20,000 miles of new highways which would barely accommodate, when placed bumper to bumper, the 5.1 million new vehicles produced that year, and in 1950 the nation built about 20,700 miles of new highways which would hardly provide parking space for the new vehicles produced during that year. Requests for new and better highways are daily recorded. Many are occasioned by essential need and cannot forever be ignored or denied.

Good roads cost money, but crowded, outdated and broken up roads cost more. They take a heavy toll in accidents, fuel waste, vehicle expense and time lost, they impair the efficiency of essential transportation systems and handicap the entire economy.

If the foregoing statements are of any significance, then it must be concluded that the nation, as a whole, is not constructing new highways at a rate to keep pace with the growing needs of the people, and the situation in Nebraska is not greatly different from that throughout the nation.[1]

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1): Attention is called to the first chapter of this report entitled Trucks and Our Highways which gives further detailed information as to present traffic and other pertinent data on Nebraska's Highways.

An accelerated road program will require funds in excess of those currently collected, and the questions immediately arise, (1) In what amount will additional funds be required? (2) From what sources are they available and by what method shall they be collected? This last question is discussed in Chapter II of this report.

How Much Is Needed?

A study as to how much, if any, additional revenue for highway purposes is needed, over that now collected by the State of Nebraska, is not among the assignments of this committee. There are some who estimate the amount in astronomical figures manifestly beyond the ability of the public to pay, and there are those who vigorously contend that no additional funds are necessary and that economy in administrative costs and that increased efficiency in construction and maintenance will furnish all the money required. It will be exceedingly difficult to justify either contention.

The highway problem with which the state is now confronted is greatly aggravated by reason of the following facts:

1. Many of our present highways have about outlived their normal life, and maintenance costs are excessive.

2. Many of our present highways were designed and built for the accommodation of outdated vehicles.

3. During the war years highways were considered more or less expendable and maintenance was neglected. Extensive "stop-gap" rehabilitation or reconstruction is now necessary and expensive and state funds are not matched by federal funds for this purpose.

4. Inflation has greatly increased construction costs over what they were 10 years ago.

5. The percentage of increase, during the past ten years, in the number of vehicle registrations and in highway traffic density greatly exceeds the percentage of increase in the population and the amounts expended on the highways.

In 1948, a study of Nebraska's need for increased highway facilities as made by a Nebraska Highway Advisory Committee. This committee was made up of 35 representative Nebraska citizens of unquestioned probity, ability, experience, and unbiased motives. The study was financed jointly by the Public Roads Administration and the State of Nebraska. It was directed by the Automotive Safety Foundation, an independent organization widely recognized as amply qualified by experience and personnel for the purpose. The committee's final report was published in a book entitled Nebraska Highway

Needs. The study was an exhaustive one and the report presents the committee's findings in great detail and logical sequence. Its findings are difficult to contradict, and its analyses and conclusions in the matter of Nebraska's highway problem are fully applicable today in perhaps even more accentuated detail. Naturally, the proposed plan of a completed highway system will change over the years with changing conditions and changing standards of design. It is probable, however, that such changes will add to rather than subtract from the estimate of funds required. Just exactly how much is needed in the way of increased revenue is an important and highly controversial question which the committee will not attempt to answer. A careful and unbiased study of the 1948 committee report leads, however, to the conviction that considerable increase in revenue will be necessary if Nebraska is to maintain its place in the Nation's progress. The necessity for and the amount of increased taxation is a matter that the Legislature must decide, and its decision should be based not only upon actual need, but upon the ability of the public to pay, and a judicious interpretation of what the people actually desire.

Briefly, the Highway Advisory Committee's report estimated that in order to take care of Nebraska's accumulated needs as of January 1, 1949, the mileage listed would require some type of improvement such as surfacing, resurfacing, reconstruction or new construction. The report estimated that these improvements would require expense on the following mileage:

State Highways	6,419 miles
County Roads	63,877 miles
City and Village Streets	1,921 miles
Total	72,217 miles

The report further estimated that these improvements would require an expenditure, as of January 1, 1949, in the following amounts:

State Highways	$259,313,000.00
County Roads	120,020,000.00
City and Village Streets	85,621,000.00
Total	$464,954,000.00

The longer the program is delayed the greater its final cost, due to maintenance and necessary replacements, and in order to complete the program in 20 years, the report estimated it would require a yearly expenditure of $46,316,000.00.

To carry out the report's suggested program at the present day price level would raise this estimated yearly requirement from $46,316,000.00 to perhaps $64,000,000.00 and the combined annual income of state, counties, and cities for highways, roads, and streets on the 1951 level was only $35,631,000.00.

A logical approach to the problem of designing a practical motor vehicle tax program in Nebraska would be the following procedure:

1. Lay out and adopt a completed and ultimate State Highway System and determine by scientific analysis based on engineering knowledge and technique the order in which highways should be constructed or reconstructed.

2. Decide upon the number of years to be allowed for the program completion.

3. Estimate the cost of uncompleted construction and the annual cost of necessary maintenance and reconstruction.

4. Determine the amount of money necessary each year to complete the program in the time allotted.

5. Design and adopt a tax program that will provide this amount of money each year.

6. Permit no additions or changes in the adopted State Highway System without the approval of the Legislature.

This is practically the procedure outlined in the Committee Report entitled Nebraska Highway Needs. There is, of course, no general acceptance as to the amount of money the report lists as necessary, but the road program recommended was only adopted after careful study and analysis and any curtailment will be vigorously opposed.

The State Highway System

In 1919, the Legislature provided for a State Highway System, totaling 4,500 miles, connecting the county seats and including 79 statutory route numbers. Subsequent legislative enactments have increased the system until it includes, as of 1952, 11,142 miles of legally designated state highways on 292 different routes, of which 9,658.7 miles have been built as follows:

Federal Aid, Primary	5,107.1 miles
Federal Aid, Secondary	4,069.3 miles
Federal Aid, Urban	98.0 miles
Not on Federal Aid System	384.3 miles
Total State Maintained	9,658.7 miles

The increase in the highway system mileage has largely come about by reason of the fact that when roads are built by the state with federal aid, the state is made responsible for the maintenance of such roads and

the Nebraska statutes provide that the mileage be added to the State Highway System. Prior to 1949, this was true of roads built by counties with federal aid. The state is required to maintain highways through cities under 2,500 population, and also to pay half the cost of surface maintenance up to a 24 foot width on streets in cities from 2,500 to 25,000 population.

On secondary and county roads the responsibility for maintenance may be discharged by agreement with units of local government, and it has been suggested that before the state agrees to the construction of any more secondary or county roads taking advantage of federal aid, that the state have an agreement that the county will maintain such roads.

The need of promptly laying out and adopting a completed and ultimate State Highway System is definitely indicated.

CHAPTER I

TRUCKS AND OUR HIGHWAYS

A prominent state highway official has summarized one aspect of the nation's highway problem as follows: "Today we find our main highways clogged with more cars traveling more miles than ever before, more and heavier trucks carrying bigger loads and traveling greater distances than ever before."[1] The same authority adds that "Many of our rural and urban highways have shown repeatedly that they are not capable of carrying the ever-increasing number of trucks with heavy axle loads."[2]

Nebraska does not have the heavy concentration of population and industry found in many eastern states and on the Pacific coast. For this reason, we do not have as great density and weight of traffic as some highways in other areas. Nevertheless, we have experienced in recent years the same proportionate increase that is found elsewhere, and this increase in traffic has placed a serious strain upon existing highway facilities.

An increase in traffic has been noted with respect to all classes of vehicles. The increase in passenger vehicle traffic is illustrated in part by the increased number of vehicles registered in the state since 1937 which may be regarded as a typically, pre-war year. This increase is shown in the following table:[3]

Passenger Cars Registered
in Nebraska, 1930, 1937 and 1944 to 1951[4]

Year	Vehicles Registered
1930	367,410
1937	351,184
1944	327,396
1945	331,442
1946	351,370
1947	370,893
1948	395,649
1949	421,327
1950	442,643
1951	468,444

1): T. J. Kauer, Director, Ohio Department of Highways, "The Maryland Road Tests," State Government, May 1951, P. 126
2): Ibid.
3): Information supplied by Division of Highway Planning and Survey, Department of Roads and Irrigation.
4): Includes taxicabs and state-owned cars.

The table above shows that the number of passenger cars registered in the state increased by 27.4% from 1937 to 1951. Due to the increase both in weight per vehicle and miles traveled per vehicle, however, the increase in volume of passenger vehicle traffic has been much greater than these figures would suggest. For example, the gross tonnage of passenger cars passing each state loadometer station each day increased 105.9% from 1936 to 1950.[1] This is shown in the tonnage figures for selected years as follows:[2]

Gross Tonnage Per Day of
Passenger Cars Passing Average Loadometer
Station in Nebraska, 1936, 1946, and 1948 to 1950

Year	Tonnage
1936	1,650
1946	2,232
1948	2,795
1949	3,056
1950	3,397

Residents of Omaha do about 84% of their driving on streets built and maintained by the city, 15% on the state's rural highways and only about 1% on county roads. Nebraskans living in villages under 1,000 population do about 60% of their driving on rural state highways, 25% on county roads and 15% on city and village streets.

Residents of rural areas outside of our incorporated places do 45 percent of their driving on state-maintained highways, 45 percent on local rural roads, and 10 percent on city streets. Combining the travel of all Nebraska residents, we find that 47 percent is done on rural state highways, 9 percent on state highways within incorporated places, 24 percent on city streets and 20 percent on local rural roads.

Although the increase in passenger vehicle traffic has been impressive, it is relatively small when compared with the increase in truck traffic. For example, while the number of passenger vehicles registered increased by 27.4% between 1937 and 1951, the number of commercial trucks registered in the state increased by 104.5% during the same years. This increase is shown below:[3]

(See Table on Following Page)

1): Based on average of 20 loadometer stations maintained by the state.
2): Division of Highway Planning Survey.
3): Ibid.

Commercial Trucks
Registered in Nebraska
1937 and 1944 to 1951

Year	Trucks Registered
1937	29,409
1944	30,805
1945	34,588
1946	41,820
1947	47,230
1948	52,326
1949	54,609
1950	54,329
1951	60,150

While trucks of all categories show an increase, the most impressive increase has been in the number of trucks of heavier carrying capacity. In 1937, not a single truck of 17 tons capacity or more was registered in the state, but in 1950 there were 473 such trucks registered. The growth in this category is shown below:[1]

Commercial Trucks Registered
in Nebraska of 17 Tons Capacity
or More - 1937 and 1944 to 1950

Year	Trucks Registered
1937	0
1944	9
1945	19
1946	62
1947	212
1948	293
1949	447
1950	473

As in the case of passenger vehicles the volume of truck traffic has increased in much greater proportion than the number of trucks registered. This is illustrated by the fact that the gross tonnage per day of trucks and buses passing the average of 20 loadometer stations increased by 217.9% between 1936 and 1950. This increase is shown by the tonnage figures for selected years as follows:[2]

(See Table on Following Page)

1): Ibid.
2): Ibid.

Gross Tonnage Per Day of
Trucks and Buses Passing Average
Station in Nebraska, 1936, 1946, and 1948 to 1950

Year	Gross Tonnage
1936	1,297
1946	2,875
1948	3,413
1949	3,943
1950	4,123

The increase in heavy truck traffic is shown further by the fact that, in 1936, an average of only 6 trucks per day having a total weight of 15 tons or more passed the average station, but in 1950 the average was 76 such trucks per day. In the latter year, an average of 9 trucks per day, each having a total weight of 30 tons or more, passed each station. The figures for selected years for trucks weighing 15 tons or more are shown below:[1]

Number of Trucks Per Day Having a
Total Weight of 15 Tons or More Passing
Average Station, 1936, 1946, and 1948 to 1950

Year	No. Trucks
1936	6
1946	55
1948	57
1949	68
1950	76

All states impose some maximum weight limit for trucks and their loads. The maximum in Nebraska, for example, is 64,650 pounds. Trucks vary considerably, however, as to the number of tires and axles upon which the load is distributed, and the distance between axles. So far as damage to the highways is concerned, the weight per axle is considered more important than the total weight, though other factors must also be taken into account. Nebraska and most other states place a limit of 18,000 pounds per axle, though some states allow heavier loads. The increase in the average number of heavy axle loads per day passing each station is shown below:[2]

(See Table on Following Page)

1): Ibid.
2): Ibid

Number of Axle Loads Over 18,000 Pounds
Passing Average Station, 1936, 1946 and 1948 to 1950

Year	Axle Loads Over 18,000 lbs.
1936	1
1946	26
1948	36
1949	44
1950	29

The decrease in the number of heavy trucks passing the average station during 1950 may perhaps be accounted for by the increased license fees for such trucks in effect for that year.

In addition to prescribing the maximum axle load and gross weight of trucks operating on the highways, virtually all states place some limits upon height, width and over-all length of trucks, trailers, and truck-trailer combinations. The height, width and length of loads have an important bearing upon traffic safety and highway design, but our immediate concern is with the weight of trucks. The violation of weight and load laws is the subject of frequent comment. These violations are of three types as follows:

1. Overweight on Capacity Plates. Each truck is required to carry a license based upon the capacity of the truck. The registration fee is graduated so that the greater the rated capacity of the truck the greater the license fee paid. Thus, a truck licensed to carry 10 tons may carry a load of 15 tons without violating either the total weight limit or the axle load limit but would still be in violation of the law. In this case, the truck operator has not paid the proper registration fee, and the state has suffered a loss in income. Manifestly license fees based on gross weight rather than on rated capacity would prevent many trucks from carrying loads in excess of that contemplated by the license for which they pay.

2. Overweight Per Axle. A truck having only 2 axles may carry a total weight of 40,000 pounds in which case it would be well under the total weight permitted for some types of trucks, but it would obviously be over the 18,000 pound limit on one or both axles.

3. Over Gross Weight. Any vehicle in Nebraska with a total weight of more than 64,650 pounds would be in violation of the law pertaining to gross weight.[1] If the vehicle has 4 axles, it might not be in violation of the axle load limit, but if it has only 3 axles, it would obviously be overweight on one or more of its axles.

1): This maximum weight is graduated down to as little as 32,000 pounds, depending on the number of axles and the distance between axles. These limits do not apply to metropolitan areas, unless regulated by city ordinance.

That there is some violation of the weight laws is indicated by the preceding table which shows that since 1936 an average of between 30 and 40 trucks every day with axle loads of more than 18,000 pounds passed each of the 20 checking stations maintained by the Department of Roads and Irrigation. This does not, however, indicate the extent to which trucks are over the gross weight permitted, or the extent to which they are overweight on capacity plates. It may be observed here that the weighing of trucks done at the 20 loadometer stations is for the sole purpose of securing information and not for the purpose of law enforcement. For this reason these trucks, when found to be overweight, are not cited for violation.

The task of enforcing the state laws pertaining to weight and load limits is assigned to the State Safety Patrol. The patrol has only a limited number of officers available for patroling the highways, and until a few months ago, had no scales of its own for weighing trucks. Enforcement depended entirely upon members of the patrol observing trucks that appeared to be overloaded and taking such trucks into towns where arrangements could be made with elevators or other private owners of scales to check the load. One of the new scales was installed by the Department of Roads and Irrigation at a location near North Platte, and another was opened near Holdrege in February 1952. The Legislature, in 1951, authorized the installation of 10 more scales at points to be selected. Other installations will be made as soon as sites and materials can be procured. The Safety Patrol reports that its personnel will have to be increased somewhat before it can operate the proposed weighing stations to the extent necessary for proper enforcement.

The number of arrests by the Safety Patrol for each type of violation for the years 1948 to 1951, inclusive, are shown in the three following tables:[1]

Number of Arrests by State Safety Patrol
For Overweight on Capacity Plates, 1948 to 1951

Year	Arrests
1948	522
1949	606
1950	1,081
1951	931

Number of Arrests by Safety Patrol
For Over Gross Weight, 1948 to 1951

Year	Arrests
1948	3
1949	92
1950	203
1951	357

1): Information secured from Nebraska State Safety Patrol.

Number of Arrests by Safety Patrol
For Overweight on Axle, 1948 to 1951

Year	Arrests
1948	15
1949	472
1950	643
1951	1,024

The foregoing tables indicate a sharp increase in the number of arrests in 1950 and 1951. This does not necessarily indicate an increase in the number of violations. It is probably explained primarily by the fact of the installation of the weighing station at North Platte in the fall of 1950 and by the gradual increase in the number of patrolmen available for enforcement purposes.

The number of arrests does not, by any means, indicate the number of violations since many trucks which are in violation are not apprehended. Such evidence as we have indicates that, while a great majority of the trucks on our highways observe the law, the aggregate number of violators is great enough to present a serious problem.

The weighing stations now maintained by the Safety Patrol are not operated 24 hours a day or 7 days a week, but are operated only occasionally. Some of the results of the early weighing activities at the North Platte station are indicated below:[1]

1. In one 54-hour period between January 8 and January 10, 1951, approximately 400 trucks were "waved by" and 920 were weighed. Of the 920 which were weighed, 180 were in violation of one or the other of the weight limits.

2. On January 17 and 18, 1951, 410 trucks were weighed and 42 were found to be in violation.

3. On January 23 and 24, 1951, 412 trucks were weighed and 40 were found to be in violation.

4. On February 8 and 9, 1951, 495 trucks were weighed and 32 were in violation.

5. On February 21 and 22, 1951, 512 trucks were weighed and 38 were in violation.

6. Between January 8, 1951 and March 7, 1951, 3,475 trucks were weighed and 357 were in violation.

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1): Ibid.

[illegible] preceding tables indicate a sharp increase in the number of [illegible] 200 and 1951. This does not necessarily indicate an increase [illegible] number of violations. It is probably explained primarily by the [illegible] the adoption of the weighing station at Santa Fe in the [illegible] 1951 and the general increase in the number of vehicles [illegible]

[illegible] number of arrests does not, by any means, indicate the number of [illegible] since many trucks which are in violation are not [illegible] [illegible] as we have indicated that, while a great majority [illegible] [illegible] our highways observe the law, the aggregate number of violations [illegible] enough to present a serious problem.

The weighing stations now established by the Safety Patrol are not [illegible] in hours a day or 7 days a week, but are opened at only [illegible] [illegible] the results of the daily weighing stations on the Santa Fe [illegible] are tabulated below.

[illegible] 100 trucks were weighed [illegible] and 52 were found [illegible] [illegible] 180 were in violation of one or the other of the [illegible]

[illegible] On January 17 and 18, 1951, 460 trucks were weighed and 92 were [illegible] in violation.

2. On January 23 and 24, 1951, 440 trucks were weighed and 7[illegible] were in violation.

[illegible] 8 and 9, 1951, 495 trucks were weighed and 72 were [illegible]

[illegible] were weighed and 5[illegible] were in violation.

The most recent evidence suggests either that violations are diminishing or that the trucks which are in violation are more successful in avoiding the weighing stations. This is indicated by the following figures:

1. During the 12-months period ending December 31, 1951, 12,200 trucks were weighed at the North Platte station and 1,009 violations were found, for a percentage of 8.27. Thus the percentage of violations for the entire year was lower than the percentage for the early weeks of the year.

2. During the first 4 months of 1952, 11,800 trucks were weighed at North Platte and 681 violations were found, for a percentage of 5.77.

3. During the first 4 months in which the Holdrege scale was in operation (February to May 1952), 3,451 trucks were weighed and 182 violations were found, for a percentage of 5.27.

The figures quoted above indicate that slightly more than 10% of all the trucks weighed during the period covered were in violation. This figure may be misleading, since a considerable number of trucks which obviously were not in violation were "waved by" without being weighed. On the other hand, there is some evidence that when weighing operations are started, this information is quickly communicated to trucks along the road and some of them either by-pass the station or stop and wait until the weighing station is closed. For example, it has been observed that when the weighing station is operated for three successive days, the number of violations tends to decline throughout the weighing period. It is reported that on the first day the station was in operation, violations amounted to about 20%.

It is extremely difficult to measure the exact damage done to our highways by trucks or any other particular type of vehicle. Trucks of a given weight may do relatively little damage to a road of one standard of construction, while they inflict very severe damage to a road of a lower standard of construction. Furthermore, the frequency of the passing of heavy loads is an important factor. 10 trucks of a given load passing a given point each day may cause little damage, whereas 100 or 500 trucks of the same load passing the same point each day would cause much greater damage. As noted before, the number of axles, the distance between axles, and the distribution of the axle loads are important factors.

It is known that soil and climate, as well as the weight and volume of traffic, are factors in road damage. The moisture content of the foundation, base, or surface of a road has a great deal of bearing upon the capacity of the road to support heavy loads. It has been observed that a given volume and weight of traffic may do severe damage to roads during and after spring thaws, whereas it would do relatively little damage to the same roads at other seasons of the year.

Although it is almost impossible to establish the exact effect of

[illegible] the trucks which [illegible] violations was more successful in [illegible] [illegible]ing stations. This is indicated by the following figures:

[illegible] were weighed at the North Platte station and 1,000 violations were [illegible] for a percentage of 5.4%. Over the percentage of violations for the entire year was lower than the percentage for the early months of the [illegible].

5. During the first 4 months of 1942, 14,800 trucks were weighed [illegible] Platte and 881 violations were found, for a percentage of 5.9%.

[illegible] During the first 4 months in which the Lodgepole radio was in [illegible] (January to May 1942), 3,921 trucks were weighed and 212 violations found, for a percentage of 5.4%.

The figures quoted above indicate that slightly more than 1/2 of all [illegible] weighed during the period covered were in violation. These figures [illegible] indicate, since a considerable number of trucks which obviously were in violation were "waved by" without being weighed, that the actual [illegible] violation were [illegible] than when weighing operations are absent. While [illegible] is usually communicated to trucks along the road and [illegible] by-passes the station or stop-and with [illegible] [illegible]. For example, it has been observed that when the radio is [illegible] operated for three successive days, the number of violations [illegible] throughout the weighing period. It is reported that on the [illegible] the station was in operation, violations amounted to about 70%.

It is extremely difficult to measure the exact damage done to our roads by trucks or any other predominant type of vehicle. Roads of a [illegible] may do relatively little damage to a road of one structural [illegible], while they inflict very severe damage to a road of a [illegible] of construction. Furthermore, the frequency of the [illegible] of heavy loads is an important factor. 10 trucks of a given load [illegible] given point each day may cause little damage, whereas 100 or 500 [illegible] of the same load passing the same point each day would cause [illegible] damage. As noted before, the number of axles, the distance between [illegible], and the distribution of the axle loads are important factors.

It is known that soil and climate, as well as the weight and volume of traffic, are factors in road damage. The moisture content of the [illegible], base, or surface of a road has a great deal of bearing upon [illegible] of the road to support heavy loads. Climate has obviously [illegible] volume and weight of traffic may do severe damage to roads [illegible] after spring thaws, whereas it would do relatively little damage [illegible] the roads at other seasons of the year.

[illegible] almost impossible to establish the exact effect of

truck loads upon highways, it is generally believed by state highway engineers that overloading of trucks is the cause of a great deal of damage to roads in all sections of the United States. For example, the Council of State Governments, in a recent study of this problem, secured information from state highway engineers in 45 states.[1] An overwhelming majority asserted that overloaded trucks are definitely damaging the roads in their states. Some of these reports were based upon mere observation or opinion, but others were assertedly based upon scientific engineering studies.

The Maryland Road Tests

A recent study made in the State of Maryland represents one of the most carefully devised attempts yet made to determine scientifically the effect of overloading upon highways.[2] The U. S. Bureau of Public Roads and 12 state highway departments participated in the test, which was administered by the Highway Research Board of the National Academy of Sciences. For purposes of comparison, a segment of road was divided into 4 sections as nearly equal as possible. The road consisted of two 12-foot lanes, each lane surfaced with reinforced concrete 7 inches thick at the center and 9 inches thick at the edges. The road had been in use for 9 years when the test was made, had been subjected to all kinds of weather, and was still in good condition, though it had seldom been subjected to axle loads of more than 18,000 pounds.

The road used in these tests was closed to all traffic except the loaded trucks used in the test. The tests applied to the 4 sections were as follows:

1. Tested with 2 axle trucks having rear axle loads of 18,000 pounds.
2. Tested with 2 axle trucks having rear axle loads of 22,400 pounds.
3. Tested with tandem axle trucks having tandem axle loads of 32,000 pounds.
4. Tested with tandem axle trucks having tandem axle loads of 44,800 pounds.

The damage inflicted was of three kinds--namely, cracking of the concrete surface, "pumping" at the joints or a vertical movement of the concrete slabs under pressure, causing soil and water to be forced up between the joints thus damaging the foundation, and increasing roughness showing a deterioration of the concrete surface itself. It was found that the amount of damage of all three types was closely related to the axle loads applied. It was difficult to measure quantitatively the increase in pumping and surface roughness, but the amount of cracking was carefully measured in linear feet. No final or official conclusions have appeared as yet, but as reported by one of the highway officials participating in the test, the

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1): Council of State Governments, Highway Safety Motor Truck Regulation, (1950) pp. 69 to 90.

2): T. J. Kauer, Director, Ohio Department of Highways, "The Maryland Road Tests," State Government, May 1951, p. 126.

results may be summarized briefly as follows:[1]

1. After 238,000 truck passes on section 1 with a 2 axle truck having a rear axle load of 18,000 pounds, during a six-month period, 241 feet of cracks appeared in the concrete surface, whereas the same number of truck passes with a rear axle load of 22,400 pounds produced 1,210 feet of cracks on section 2, or more than 5 times as much cracking as did the 18,000-pound load.

2. On section 3 of the road, 92,166 truck passes were made with a 32,000 pound tandem axle load which produced 307 feet of cracks, but the same number of truck passes with a tandem axle load of 44,800 pounds produced 3,300 feet of cracks on section 4, or nearly 11 times as much cracking as did the 32,000-pound tandem axle load.

Some question may be raised, of course, as to the validity of these findings. Despite the care with which the project was arranged and supervised, some significant variations of soil and construction might be found in the 4 sections used, and considerable variations in temperature and moisture content inevitably occurred during the six-months period. Those who defend the trucking industry question whether the road was built to the proper specifications in the first place. They assert that the road was not as badly damaged as the reports pertaining to cracking and pumping suggest; that the road was not given proper maintenance during the test period; and that the constant passing of heavy trucks subjected the road to some eighty times the normal volume of truck traffic--thus condensing forty years of truck traffic into a six-months period.[2]

These objections should be given full consideration. Nevertheless, this experiment does seem to prove that, on the type of road tested, and under the conditions there existing, the incidence of damage rises sharply when subjected to repeated passes of single axle loads over 18,000 pounds or tandem axle loads over 32,000 pounds. It must be remembered too that many of our roads now in use were constructed to lower standards than was the test road in Maryland, and are not in as good condition as that road was when the test was started. These roads are subject to damage by light and medium trucks, or even by passenger cars, as well as the heavier ones. Some of this damage, of course, may be blamed upon the roads, or upon the political and economic conditions which produced them, rather than upon the vehicles which use the roads.

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1): Ibid.

2): See Pounded to Pieces (pamphlet of the Pennsylvania Motor Truck Ass'n. June 1951); Timken Axle News, Vol. 19, 1951, No. 3; The Case for the Trucking Industry, American Trucking Ass'n., June-July 1951 (Testimony at Subcommittee Hearings on Senate Resolution 50).

CHAPTER II

MOTOR VEHICLE TAXATION

The legislative resolution establishing this committee directed it, among other assignments, to make a study of "Methods of Raising Revenue for Highway Purposes--The Practices of Other States," and this chapter of the committee's report will be confined to that particular subject, with such additional data as were thought necessary to furnish an explanatory background.

The questions as to the source and methods of collecting funds for highway purposes present problems that have confronted and perplexed all state legislatures for many sessions, and no generally accepted solution has as yet been presented. The problem is to obtain the funds necessary to complete and maintain an adequate system of state highways in a reasonable time by an equitable allocation of a tax load not to exceed the ability and willingness to pay, of those upon whom the burden is placed.

England has solved the problem in a way by nationalizing the trucking industry. The government owns and operates all trucks engaged in hauls of more than 25 miles. Britain's government-owned-and-operated transportation system (which includes the railroads) lost nearly $40,000,000 in 1950, and of course the public paid. Surely Americans are not favorably impressed by this solution.

History

Early in the present century a number of states, including Iowa, attempted to solve their problem at one stroke by means of bond issues dependent upon a property tax for retirement, and as a result, these states now have a large mileage of roads all of the same age and condition. They are all considerably below present-day standards, they require excessive expenditures for maintenance, and virtually all of them require heavy expenditure for modernization. It is interesting to note that notwithstanding its ton-mile tax, Oregon found it necessary in 1951 to sell a 15 million dollar bond issue for the purpose of Highway Finance. Bond issues are impossible under Nebraska's Constitution. South Dakota found it necessary in 1949 to draw on the general fund in order to match federal aid, and North Dakota has found it necessary a number of times to do the same.

Special motor vehicle license fees were first imposed in New York in 1901, and thirteen years later every state in the Union had enacted similar legislation. The first gasoline tax was imposed by Oregon in

1919, and ten years later every state in the Union had followed suit.

In 1919, Nebraska established its Department of Roads and Irrigation. Prior to that time, the construction and maintenance of all highways was an obligation of the counties, townships, cities, and villages, and funds were raised by property taxation. In 1925, the first gasoline tax in the amount of 2 cents per gallon was imposed and collected in Nebraska, and since that time the gasoline tax, registration fees, and federal aid have accounted for a large share of the state's highway financing.

The gas tax was raised from 2¢ to 4¢ per gallon in 1929 and again raised to 5¢ per gallon in 1935, where it remains to date. From 1935 to 1947, 1 cent of the gas tax was diverted to assistance purposes. From 1947 to date the funds received from the gas tax have been split 2½ cents to the state highway fund and 2½ cents to the counties for road and bridge purposes. In 1949, the Legislature raised the gas tax to 6 cents per gallon and allocated 3½ cents to the state and 2½ cents to the counties, and also established a higher schedule of registration fees, but both measures were repealed by referendum vote in 1950.

The Nebraska owner of a motor vehicle today is a well-taxed individual. He pays federal taxes on the car and its tires and accessories when he buys it. He pays a property tax each year, based on its theoretical value and upon the local tax rates. He pays a license or registration fee and for a driver's license before he is allowed on the highway, and he then is compelled to pay a fuel or gasoline tax before he can operate the motor. In addition, in Omaha he pays a rather heavy wheel tax. There is surely a limit to what the ordinary man can be charged and still make it possible for him to own an automobile. It may be interesting to note that the total taxes paid on his motor vehicle by a Nebraska owner are among the highest paid by owners in any state, a fact principally due to the large property tax assessed in Nebraska, the revenue from which is not allocated to the benefit of the state highways.

In the face of the record, it will be difficult to convince the average Nebraska motor vehicle owner that he should pay more taxes on his motor vehicle. On the other hand, it will be impossible to carry on an adequate highway program suitable to the needs and demands of these vehicle owners without additional revenue in substantial amount.

Motor vehicles are not subject to a property tax in 19 of the 48 states. This tax does not, in any appreciable way, contribute to the benefit of the highways in any state except Maryland. It does, however, add very materially to the tax load imposed on the motor vehicle owner and for that reason the following data is included in this report:

There is a wide variation in the property taxes charged by the different states. For example, the property tax on a light, two-door sedan

varies from $11.76 in New Hampshire to $41.62 in Kansas. Property taxes on automobiles are entirely independent of any use the vehicles make of the highways.

In Nebraska, motor vehicles are classified as personal property, and are taxed at the domicile of the owner, at the same mill rate as other personal property of a tangible nature, and the same as real property. Since the property tax includes taxes levied by the state, county, city, village, township, and school district, the total rate varies considerably from one taxing district to another. Appraisal in Nebraska is on a uniform basis throughout the state since the State Tax Commissioner prepares a guide showing uniform values for the various makes, body types, and year models of all automobiles.

The following table and similar tables throughout this report were prepared from charts published by the Federal Bureau of Public Roads. Since the classification of vehicles differs from state to state, and the rate of the property tax varies from district to district within each state, comparative charges of value are difficult to obtain. However, in 1949, the Bureau prepared a standard specification, listing make, cost, weight, rated capacity, horsepower, etc. of a vehicle in each of the seven vehicle groups listed in the table. These specifications were submitted to each of the states and they were requested to report the property tax which would be charged on a vehicle complying with each of the seven specifications, in the capital city of the state. The figures shown in the table are the figures that were supplied by the several states.

(See Table on Following Page)

Nebraska
Iowa
Missouri
Kansas
Colorado
Wyoming
South Dakota
Highest State
Lowest State
Average State

MOTOR VEHICLE PROPERTY TAXES

Based on a Standard Specification and Charged in the Capital City of the State (From pages 166 to 176, "Highway Safety and Motor Truck Regulation," published by the Council of State Governments)

	Passenger Car		Pickup Truck Gross Wt. 4700#		Stake Truck Gross Wt. 12,500#			Van Truck Gross Wt.40,000#		5 Axle Combination Gross Wt.40,000#		5 Axle Combination Gross Weight 64,000#
	Lt. Wt.	Med.Wt.	Farm	Private	Farm	Private	Contract	Private	Contract	Private	Contract	Contract
Nebraska	$39.25	$62.26	$16.07	$35.02	$22.22	$48.42	$48.02	$95.20	$95.20	$209.66	$234.56	$461.64
Iowa	No Property Tax Charged			-	-	-	-	-	-	-	-..	-
Missouri	15.41	24.66	10.72	15.41	11.44	16.44	16.44	18.50	18.50	34.94	34.94	-
Kansas	41.62	59.12	20.95	33.03	28.98	45.69	45.69	126.29	126.29	234.56	234.56	-
Colorado	15.68	25.04	13.97	13.97	19.32	19.32	19.32	53.40	53.40	99.18	99.18	255.60
Wyoming	15.68	25.04	13.96	13.96	19.32	19.32	19.32	53.40	53.40	99.18	99.18	255.60
South Dakota	No Property Tax Charged			-	-	-	-	-	-	-	-	-
Highest State	41.62	62.76	35.10	35.02	37.75	48.42	48.42	233.50	233.50	234.56	234.56	521.34
Lowest State	5.00	8.00	5.00	5.00	5.00	14.99	14.99	18.50	18.50	34.94	34.94	59.38
Average State	24.08	34.36	14.76	21.10	19.78	27.55	27.55	68.32	68.32	121.65	121.65	289.53

From the table, it will be noted that Nebraska has the dubious honor of charging its motor vehicle owners the highest or near the highest property tax of any state in the Union. The automobile, in Nebraska for some reason not apparent, is subjected to a property tax based on a valuation much nearer its actual value than any other property, and since it must be paid before license plates are secured, it is impossible to evade as are the taxes on many other types of property.

The total amount of the property tax paid on motor vehicles in Nebraska is not known, since the tax rate is different in each county, city and school district. In 1951, the assessed value of motor vehicles in the state was $252,645,505 which accounted for 8.4% of the total valuation of tangible property in the state. Total property tax levies for the year amounted to $118,031,287.56 and if we may assume that the levies upon motor vehicles averaged the same as upon other classes of property, this would mean a tax of $9,914,628 upon motor vehicles. It is probable, however, that the total was somewhat greater since most motor vehicles are registered in cities and villages where the average tax rate is much higher than that in rural areas. Some estimates place the tax for 1951 at $11,000,000 or more. This tax, though paid upon motor vehicles, was not earmarked for highways but was used for general governmental purposes by the state and its subdivisions.

If motor vehicle owners are to be charged the full cost of administration, construction and maintenance of the highway system, it is difficult to understand the justice of charging them, in addition, a larger percentage of the cost of other governmental activities than is charged the owners of other tangible property.

The State of New York now allocates all motor vehicles taxes, including license fees, gasoline taxes, and its proposed weight mileage fees, to the general fund, from which it is budgeted to the Highway Department in such amount as the legislature deems necessary. Such a policy, if adopted by Nebraska, might result in the highways of the state receiving some benefit from the property tax paid by its motor vehicle owners.

Motor Vehicle Taxes Allocated to the Highways

Nebraska's principal present sources of revenue for the construction and maintenance of highways as collected from the motor vehicle owner, are:

(a) The License Fee
(b) The Gasoline Tax
(c) The Equalization Fee

Receipts from other motor vehicle fees and charges not considered in this report are allocated as follows:

A. Allocated in part to the construction, maintenance and administration of state highways.
   1. Towing fees (the part collected by County Treasurers).
   2. Charges made for transfer, duplicate and lost certificates.

A (Continued)

3. Charges made by municipalities (wheel tax etc.) a small part of which may be expended on streets within the State Highway System.

B. Allocated to Fund 192, the Motor Vehicle Division (from which fund the appropriation for the Safety Patrol is made).

1. The dealers license fees.

C. Allocated to the State's General Fund.

1. Safety device permits.

D. Allocated to Fund 128 for the Department of Agriculture.

1. Motor fuel transport fees.
2. Towing fees collected at Ports of Entry.
3. Port of Entry fees.

Motor Vehicle License or Registration Fee

The license or registration fee charged motor vehicle owners is generally referred to as the "First Structure Tax" and is collected in some form by every state in the Union. It may be regarded as a "readiness to serve" or "stand by" charge, originally intended to cover the cost of providing the funds necessary for the administration and supervision of the highways.

The following motor vehicles were registered during 1951 in Nebraska: [1]

Passenger Automobiles	467,445
Commercial Trucks	60,150
Local Trucks	5,014
Farm Trucks	73,267
Commercial Trailers	1,419
Miscellaneous Trailers	46,292
House Trailers	4,397
Semi Trailers	8,041
Taxicabs	506
Buses	888
Motorcycles	4,514
Total	671,933

In 1951, the 671,933 motor vehicles registered in Nebraska paid a total of $5,130,167.33 in registration fees. Of this amount, $2\frac{1}{2}$% was deposited in the State General Fund, 30% in the State Highway Fund, and the remaining $67\frac{1}{2}$% was retained by the counties for highway purposes.

1): Annual Report of Motor Vehicle Division for year 1951

During the year ending December 31, 1951, Nebraska was paid a total of $6,809,120.62 in motor vehicle fees and permits of various kinds. The collection and distribution of these funds is shown below:

Source	To Counties	To General Fund	To Highway Department
Drivers' Licenses	$	$ 1,209,523.23	$
Motor Vehicle Title		207,347.25	
2½% Registration Fee		124,594.11	
67½% Registration Fee	3,557,343.06		
30% Registration Fee			1,448,230.16
Bus Licenses			36,654.75
Towing Permits			2,733.65
Tax on Diesel Fuel (Equalization Fees)			222,694.41
Total	$3,557,343.06	$ 1,541,464.59	$1,710,312.97

The table shows that the counties receive over twice the return from the above sources as does the Highway Department while the general fund receives almost 90% as much.

An abbreviated synopsis of Nebraska's current registration fees is presented herewith (60-329 to 344, inclusive, Revised Statutes of 1943):

1. For each passenger car having a seating capacity of 7 passengers or less and operated for hire, $5.00, plus $4.00 for each person the car is designed to carry in excess of 7, in addition to the driver.

2. For each similar passenger car but not operated for hire, and weighing less than 2,800# - Fee $3.00.

3. For each similar passenger car not operated for hire, and weighing in excess of 2,800# - Fee $5.00.

4. For motor vehicles carrying more than 7 passengers and operated for hire, the fee is $25.00 plus $5.00 additional for each person the vehicle is designed to carry in excess of 7, in addition to the driver.

5. Farm and local trucks and truck-trailers fees are based on rated carrying capacity as follows:

$1\frac{1}{2}$ Ton and less carrying capacity - Fee $4.00
2 Tons carrying capacity - Fee $6.00
For trucks with more than 2 Tons carrying capacity the fee is $6.00 plus $4.00 for each additional ton in excess of 2 Tons.

6. Commercial trucks and truck-trailers - The fees, based on carrying capacity, are as follows:

$\frac{1}{2}$ Ton carrying capacity - Fee	$ 4.00
1 Ton carrying capacity - Fee	8.00
$1\frac{1}{2}$ Tons carrying capacity - Fee	12.00
2 Tons carrying capacity - Fee	15.00
$2\frac{1}{2}$ Tons carrying capacity - Fee	25.00
3 Tons carrying capacity - Fee	45.00
4 Tons carrying capacity - Fee	60.00
$4\frac{1}{2}$ Tons carrying capacity - Fee	75.00
5 Tons carrying capacity - Fee	100.00

For similar vehicles having a carrying capacity of over 5 Tons, the fee is $100.00 plus an additional $25.00 for each ton of carrying capacity in excess of 5 Tons.

In addition, the law makes special provisions for other classes of vehicles including school buses, rental cars, government-owned cars, and cars owned by charitable institutions, commercial trailers, the implements of husbandry, motorcycles, ambulances, hearses, etc.

While all of the states use "weight" more or less as a factor in determining fees, they define weight in various ways, and there is no uniformity in the other factors used so that a comparison of the practices of the different states is difficult and of questionable practical value. The following table was prepared from information taken from publications of the Bureau of Public Roads, and the figures were compiled by following the same methods that were employed in preparing the table on Property Taxes.[1] The amounts listed as registration fees include carrier and other taxes now charged by some states and, in the case of Nebraska, both the present fees and those contemplated by LB-399 and LB-401--bills enacted by the Legislature in 1949 but later repealed--are included as closely as they can be estimated.

(See Table on Following Page)

1): See Table on page 16.

REGISTRATION FEES

Based on a Standard Vehicle Specification and Taken from Pages 166 to 177, "Highway Safety and Motor Truck Regulation," published by the Council of State Governments

	Highest State	Lowest State	Average	Nebraska Current	Nebraska As Repealed
Passenger Cars					
Light Weight	$ 24.00	$ 2.50	$ 11.53	$ 3.00	$ 6.00*
Medium Weight	39.00	3.00	14.90	5.00	8.00*
Pickup Trucks					
Farm	37.00	2.50	13.09	4.00	8.00
Private	37.00	2.50	16.48	6.00	15.00
Stake Trucks					
Farm	70.00	4.50	29.22	4.00	12.00
Private	132.50	10.00	48.07	60.00	80.00
Contract	342.50	15.00	87.46	60.00	80.00
Van Trucks					
Private	272.50	25.00	93.62	100.00	120.00
Contract	476.50	32.00	152.32	100.00	120.00
Tractor-Trailer Combination, 40,000# Gross Vehicle Weight					
Private	577.00	45.00	229.28	241.00	381.00
Contract	892.06	66.00	373.50	241.00	381.00
Tractor-Trailer Combination, 64,000# Gross Vehicle Weight					
Contract	2,186.50	217.00	920.65	361.00	561.00

The table shows that under the existing law, if the average of all the states is accepted as a standard, Nebraska motor vehicle owners are not discriminated against, and that the rates contemplated by the laws repealed in

*): The Nebraska law which was repealed provided for a registration fee of $6.00 for cars weighing less than 2,600 lbs. and $8.00 for cars weighing 2,600 lbs. or more. The present law provides for a fee of $3.00 for cars weighing less than 2,800 lbs. and $5.00 for those weighing 2,800 lbs. or more.

1950 would not have severely handicapped them when judged by the same standard. It is to be noted that fleet truck owners can declare their domiciles in any one of the states in which they operate, which is a potent argument against excessive registration fees, since the state of domicile, receives the benefit of the registration fees.

Iowa
Missouri
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Wyoming
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A Table Prepared on a Similar Basis and Showing a Comparison Between Nebraska's License Fees and Those Charged in its Surrounding States

LICENSE FEES

	Passenger Car		Pickup Truck Gross Wt.4700#		Stake Truck Gross Wt. 12,500#			Van Truck Gross Wt. 18,500#		Tractor-Trailer Combination 40,000# Gross Weight		Tractor-Trailer Combination 64,000# Gross Weight
	Lt.Wt.	Med.Wt.	Farm	Private	Farm	Private	Contract	Private	Contract	Private	Contract	Contract
Iowa	$24.00	$33.00	$25.00	$25.00	$70.00	$70.00	$70.00	$155.00	$155.00	$495.00	$495.00	$795.00
Missouri	11.00	11.00	10.00	15.00	10.00	30.00	30.00	40.00	40.00	153.00	153.00	-
Kansas	10.00	13.15	7.50	7.50	15.00	15.00	15.00	60.00	60.00	130.00	130.00	-
Colorado	5.60	6.95	5.75	5.75	17.50	17.50	17.50	25.00	25.00	45.00	45.00	100.00
Wyoming	5.00	5.00	5.00	5.00	15.00	15.00	15.00	40.00	40.00	80.00	80.00	200.00
So.Dakota	17.00	25.00	15.00	15.00	37.50	37.50	37.50	87.50	87.50	172.50	172.50	642.50
Nebraska Present Fees	3.00	5.00	4.00	6.00	4.00	60.00	60.00	100.00	100.00	241.00	241.00	361.00
Nebraska as proposed by LB-401 (Repealed 1950)	6.00	8.00	8.00	15.00	12.00	80.00	80.00	120.00	120.00	381.00	381.00	561.00

It is interesting to note that in Nebraska the 12,500 pound gross vehicle weight stake truck in private use requires an $60.00 license, while a vehicle carrying the same load can be registered as a farm vehicle, granted full use of the highways and charged only a $12.00 license. It is further interesting to note that in 1950, - 52% of Nebraska's trucks were registered as farm trucks.

The table shows the wide variation in license fees between Nebraska and the surrounding states. The fact that Iowa has no property tax on motor vehicles accounts for its rather large registration fee. Colorado, Wyoming and Kansas have a ton-mile tax in addition to a registration fee which may account for their low registration fees, while South Dakota has a ton-mile tax and does not charge a property tax against motor vehicles, which makes their schedule of registration fees rather difficult of comparison.

The Driver's License Fee
(60-403 to 440, Incl. R.S. 1943)

Every driver of a motor vehicle is required to secure a driver's license for which he is charged an initial fee of $2.00 and $2.00 for renewal every two years. Ten cents of the fee collected is credited to the general fund of the county in which the fee is collected, and the remainder is remitted to the State Treasurer and credited to the State General Fund. From this fund is appropriated the state's share for the support of the Safety Patrolmen's retirement system, and the remainder is for traffic and safety educational purposes and available for administration of the Act and for the enforcement of traffic laws. During the 1949-1951 biennium, the state collected $1,303,430.64 from this source.

The Gasoline Tax

The gasoline tax, known as the "Second Structure Tax" is the most important source of highway revenue and is a tax common to all states. If the license fee is considered to be a "readiness to serve" or "stand-by" charge, then the gasoline tax can be similarly regarded as a charge for the actual "use" of the facilities. It attempts to distribute equitably such charge on the assumption that the larger and heavier the vehicle, the larger gallonage of gasoline it will consume with a corresponding increase in the tax paid. Such an assumption is not entirely justified, but the tax is easy to collect and difficult to evade and the cost of collection is small. In Nebraska, it amounts to about ½ of 1% of the amount collected, which includes the allowance to the dealer for his expense which allowance is 1% on the amount remitted each month up to and including the first $2,000.00, and ½ of 1% on all sums in excess of $2,000.00.

The table below shows the different Nebraska gasoline tax rates which have been in effect since March 1925, the dates on which they became effective and the way in which they were distributed:

(See Table on Following Page)

Date Passed	Date Effective	Tax per Gal. in Cents	State Assistance	Rural Mail Routes	Counties	Dept. of Roads & Irrigation
March 31,1925	March 31, 1925	2	0.0	0.0	0.0	2.0
March 29,1929	March 29, 1929	4	.0	.0	1.0	3.0
May 15,1933	May 15, 1933	4	.0	.0	1.5	2.5
Febr. 27,1935	March 15, 1935	5	1.0	.0	1.5	2.5
Emergency Relief Act Declared Unconstitutional	Sept. 20, 1935	4	.0	.0	1.5	2.5
Nov. 26,1935	Nov. 26, 1935	5	1.0	.0	1.5	2.5
Assistance Portion Expired	March 1, 1937	4	.0	.0	1.5	2.5
March 24,1937	March 1, 1937	5	.5	.0	1.5	3.0
May 31,1939	July 1, 1939	5	1.0	.0	1.5	2.5
May 21,1941	Sept. 26, 1941	5	1.0	.0	1.35	2.65
May 24,1943	July 1, 1943	5	1.0	.0	1.5	2.5
May 26,1947	Sept. 1, 1947	5	.0	1.0	1.5	2.5
May 24,1949	May 24, 1949	6	.0	1.0	1.5	3.5
Nov. 7,1950	Dec. 1, 1950	5	.0	1.0	1.5	2.5

It will be noted that at present all money received from the gas tax, after deductions for refunds and administrative costs, is divided equally between the State Highway Fund and the counties.

The counties' share, or $2\frac{1}{2}$¢ a gallon, is divided into two parts. The proceeds of a 1¢ tax, or 20% of the total, is allocated to the counties for the specific purpose of improving rural mail routes, and $1\frac{1}{2}$¢, or 30% of the total, for general road purposes. All of the counties' share is divided among the 93 counties in accordance with a 3-way formula, 10% of the total going to counties in proportion to their non-farm population, 45% in proportion to population outside incorporated cities and villages, and 45% in proportion to motor vehicle registrations.

A portion of the money which the county receives for general road purposes (that is, excluding the amount allotted for the improvement of rural mail routes) is divided with the cities. In all counties except Douglas County, the cities and villages get the 10% allotment which is based on non-farm population. In Douglas County, the cities get this amount plus an additional 50% of the amount which is taken out of the county's share.

During the calendar year ending December 31, 1951, the state collected a total of $23,496,813.90 in gasoline taxes. This was distributed as follows:

State Highways	$ 10,657,801.21
Counties - Rural Mail Routes	4,263,120.47
Counties - Roads and Bridges	6,394,680.71
Refunds - Dealers	283,817.35
Refunds - Farm	1,897,394.16
Total	$ 23,496,813.90

There is again a wide variation in rates charged by the various states, the rates charged varying from 9 cents per gallon in Louisiana to 2 cents in Missouri, which state diverts a part of its income from a sales tax to its highways. Following, is the record:

1 state charges 9¢ a gallon
4 states charge 7¢ a gallon
3 states charge 6½¢ a gallon
12 states charge 6¢ a gallon
12 states charge 5¢ a gallon
2 states charge 4½¢ a gallon
9 states charge 4¢ a gallon
4 states charge 3¢ a gallon
1 state charges 2¢ a gallon

The average gasoline tax, all of the states considered, is now about 5½ cents per gallon. A New York state legislative council committee recently recommended that its gasoline tax be raised from 4 cents to 6 cents a gallon. In the states surrounding Nebraska, the following rates are in effect:

Iowa	4¢ per gallon
Missouri	2¢ per gallon
Kansas	5¢ per gallon
Colorado	6¢ per gallon
Wyoming	5¢ per gallon
South Dakota	5¢ per gallon

All users of gasoline utilized for any purpose whatsoever, except for exemption granted the dealers and the farmer, are taxed and the money used for the benefit of the highways, except the tax collected on aviation gasoline, which goes into the aviation fund. Refunds to farmers are granted in 23 of the 48 states. Nebraska, in the year 1951, returned to the farmers as a refund on the gasoline tax the sum of $1,897,394.16. While the very great majority of those claiming refunds are unquestionably honest in filing claims, there are exceptions and the privilege offers a continuing temptation to cheat which a few are unable to resist. It is significant to note that Minnesota has instituted suit against 36 persons accused of violation

of the gasoline tax refund laws, and more suits are in prospect. Three convictions were recently obtained in Oregon. Nebraska's records were recently checked and no indications were found as to violations of the law.

It would be difficult to justify a statement that the industrial user of gasoline or the delivery truck that never leaves the city streets should contribute more to the cost of state highways than the farmers, garage, hotel, and motel operators, or automobile dealers, which is exactly what happens when a tax is paid on gasoline used only for industrial purposes.

Equalization Fee

In lieu of the gasoline tax, an attempt is made in most states to charge vehicles using fuel other than gasoline in some manner to compensate for their use of the highways--an amount comparable to that charged gasoline-powered vehicles. Some states impose a greatly increased tax per gallon on the fuel used, and others attempt equalization by an increased license or registration fee. The difficulty in establishing an equitable basis for equalization purposes arises from the fact that diesel-motored equipment obtains greater road mileage per dollar of fuel cost than gasoline-driven equipment. It is authoritatively stated that diesel-motored trucks obtain from 50% to 100% more miles of road travel than gasoline-driven equipment at an equal fuel cost.

Nebraska attempts to solve the equalization problem by means of an annual equalization fee paid quarterly and in addition to the regular license or registration fee. These fees are on a rated capacity basis and vary from $15.00 on a ½ Ton truck to $250.00 on a 5 Ton truck, with an added charge of $50.00 per ton for each ton of capacity over 5 tons. The fees for all other diesel-motored vehicles, in addition to their regular license fees, are in amount equal to twice the applicable license fee. Resident owners of such vehicles could formerly purchase coupon books and receive credit for such days as they operate outside the state, as evinced by unused coupons deposited by the owner at the ports of entry, but the law permitting this (60-20) was repealed in 1951 (LB-235).

Out-of-state trucks are granted the privilege of paying, in lieu of the regular quarterly equalization fee, an amount equal to 1% of the annual equalization fee for every day they operate in Nebraska.

The matter is of increasing importance since gasoline powered vehicles and equipment are rapidly being replaced by diesel-powered units. At present gasoline-powered contractor's equipment pays a fuel tax while diesel-operated equipment does not, and it would appear that a gallonage tax would be more equitable and remunerative than fees based on rated capacity. Nebraska's present system of charging an equalization fee is open to criticism, and might well be the subject of study and consideration, since the state would appear to be losing a considerable amount of revenue because of

the insufficiency of the fee.

Reciprocity

Nebraska's Reciprocity Law (Section 60-305, R.S.Neb. 1943) permits the extension of full reciprocity on license fees to trucks from 40 other states on interstate operations only. These 40 states extend similar privileges to Nebraska vehicles. The law does not extend reciprocity on intrastate hauling. Nebraska extends full reciprocity on all passenger car licenses owned by non-residents of the state.

Reciprocity can rapidly become a complicated matter as the states adopt different methods of taxation. Kansas now has a ton-mile tax and Nebraska has none. Full reciprocity is granted in both states on cargoes of sand, gravel, rock and road construction equipment, and on farm trucks hauling farm produce, livestock and other farm products. All other Kansas trucks using Nebraska highways must obtain a permit by paying the following fees, based on the trip proposed and on the following gross weights carried:

Under 15,000 pounds	.015¢ per mile
15,000# to 25,000#	.02 ¢ per mile
25,000# and over	.03 ¢ per mile

and Nebraska trucks pay corresponding fees when entering Kansas. Reciprocity charges are at best but a compromise. They are established by mutual agreement and their application can easily result in discrimination and injustice to certain cargoes.

Port of Entry Statistics

Nebraska's ports of entry are under the jurisdiction of the state's Department of Agriculture and fees collected for the past three years at these ports were as follows:

1. FEES COLLECTED AND DIRECTLY CREDITED TO THE DEPARTMENT OF ROADS AND IRRIGATION

	1949	1950	1951
A. Equalization Fees	$ 34,896.12	$97,285.15	$160,156.30
B. Gasoline Tax in excess of 20 gallons in trucks entering the state	30,272.55	42,020.83	48,820.25
C. Mileage Fees on Foreign Trucks where no reciprocity is in effect	87,194.76	104,661.74	98,432.81*
Totals	$152,363.43	$243,967.72	$307,409.36

*): The amount listed under C for the year 1951 was for the period 1/1/51 to 11/23/51.

2. FEES COLLECTED AND DIRECTLY APPROPRIATED TO THE DEPARTMENT OF AGRICULTURE FOR THE COST OF ADMINISTRATION

	1949	1950	1951
A. Inspection Fees - 50¢ per load of gasoline entering the state (Fee repealed by 1951 Legislature)	$ 40,980.50	$ 43,974.00	$ 29,271.32
B. Tow Car Permit Fees at $10.00 each	48,620.00	61,990.00	79,130.00
Totals	$ 89,600.50	$105,964.00	$108,401.32

It is to be noted that in 1951 the Department of Agriculture collected a total of $415,810.68 from the above fees, at the ports of entry, from which amount they retained $108,401.32 or 26% for their cost in collecting.

Since the collections noted are all directly concerned with the use of the highways, it would appear, at first glance, that the ports of entry could well be under the jurisdiction of the Highway Department rather than the Department of Agriculture. However, these ports have other responsibilities which the Highway Department is not well fitted to handle and a divided responsibility would be inefficient and expensive.

The Department of Agriculture operates under a budget established by the Legislature, which appropriates for the cost of operation a specific sum plus all unexpended balances at the end of the fiscal year. These unexpended balances seem always to be rather conservatively estimated. For example: For the current biennium the unexpended balance in account #128 was estimated, as of June 30, 1951, as $25,000.00 while it actually amounted to $109,967.86, and under account #129 it was estimated at $50,000.00 while it actually amounted to $81,876.10. These overruns, of course, automatically increase the Department's budget allowance as set by the Legislature.

Many interstate truckers complain that they are expensively detained at ports of entry. Ports of entry constitute a barrier between states, emphasize state lines, engender bad feeling, and prevent the free flow of commerce. Increasing their functions, increases their expense of operation and adds more names to the state's already large payroll.

Highway Use Stamps

During the last war, the federal government imposed a Highway Use Stamp Tax whereby all owners of passenger cars and trucks were required to purchase and post in their vehicles a stamp costing $5.00 before they were allowed the use of the highways.

In 1949, the State Legislature considered a similar stamp tax (LB-402). Briefly, the bill provided that whenever it became evident that the state

[illegible] TO PERMIT APPROPRIATION TO THE DEPARTMENT OF [illegible] FROM THE GOOD OF APPROPRIATION

	1950	1951	Total
A. [illegible] tion Fees - 50% per land [illegible] entering the state (are received by land departments)	$ 40,040.50	$ 49,171.00	$ 89,211.50
[illegible] our Permits issued at $10.00 each	$21,520.00	$ 8,200.00	$ 29,720.00
Totals	$ 87,606.50	$105,[illegible]	$ [illegible]

It is to be noted that in 1951 the Department of Agriculture [illegible] $45,910.00 from the above fees, at the parts of [illegible] they retained $105,[illegible].21 or 58% for their [illegible] in collections.

The collections noted are all directly concerned with the [illegible] ways. It would appear, at first glance, that [illegible] only [illegible] the jurisdiction of the Highway Department [illegible] of Agriculture. However, some parts have [illegible] Highway Department is not well fitted to handle and a division [illegible]

The Department of Agriculture operates under a budget controlled by [illegible], which appropriates for the good of [illegible] balances at the end of the fiscal year. These [illegible] to be neither consumer [illegible] Department the [illegible] balances in [illegible] $ [illegible] $ [illegible] $

would not be able to match federal aid funds available for highway construction, the State Engineer was directed to prepare a budget showing the additional funds necessary for such matching and a road program showing where the additional funds would be used. Upon approval by the Governor, State Treasurer, and Auditor of Public Accounts he was further directed to issue stamps of such a single denomination as would, when purchased by every passenger car and truck owner in the state, bring in enough money to match the federal aid available. The stamp could not exceed $5.00 in denomination and could not be issued more than once in a 12-month period.

The advantages claimed for the tax were that it would raise a large amount of money quickly, that the cost of collection would be insignificant and that its imposition would not be particularly onerous or seriously objected to. However, a single denomination stamp had the disadvantage of placing the burden of the load on the passenger car owner, and an amendment was offered providing higher denomination stamps for trucks and other commercial vehicles. The bill was debated at some length in the Legislature, but was finally indefinitely postponed without a record vote.

Based on the motor vehicle registration in the state in 1950, the law, as offered, would have added about $3,100,000.00 to the funds available for highway construction that year, and the bill, as amended, would have provided about $4,500,000.00.

A similar bill, LB-562, was considered and again rejected by the Legislature in 1951. This bill would have required a $1.00 stamp for passenger cars and stamps of a higher denomination for other motor vehicles, and on the state's present motor vehicle registration it would have resulted in an income of approximately $1,200,000.00.

Third Structure Taxes

The "First and Second Structure Taxes," namely the license fee and the gasoline tax, are the traditional methods of collecting funds for highway expenditures, and they will probably continue to be the basic sources of income for such purpose. They are generally considered justifiable and fairly sound in principle by highway users and are accepted by them, when charged at reasonable rates, without serious complaint. The Federal Bureau of Public Roads recently stated: "The demand for gasoline is so inflexible that no price or tax increase within reasonable limits will affect the demand." However, when license fees and gas taxes are depended upon as the sole source of highway income, they are not without fault and inherent inequity.

The gasoline tax attempts to distribute the tax load upon the highway users in proportion to the use they make of the highways, but it is difficult, by its imposition alone, to apportion equitably the added cost of facilities necessary to accommodate certain classes of traffic which use the publicly provided highways for the purpose of private gain or for the

inconvenience and the expense they occasion other highway users. It is true that properly graduated license fees might counterbalance these inequities in some degree, but they are difficult to establish without further inequalities and injustice to some highway users.

Because of the inherent weaknesses of both the license fee and gasoline tax but more largely, perhaps, because of the fact that increased revenues have become generally necessary, many states now resort to "Third Structure Taxes" which impose an additional tax load upon commercial vehicles. Many theories as to why and how such additional taxes should be imposed have been advanced. A resume of these theories was included, in 1950, by the Bureau of Public Roads in its publication, "A Factual Discussion of Motor Truck Operations, Regulations, and Taxation." from which the following abbreviated outline has been prepared.

1. The Differential Cost Theory, sometimes called the "Increment Method," is based on the fact that vehicles of different types, sizes and capacities require different highway facilities in the matters of pavement thickness, width, grade, design, etc. This theory would base the distribution of taxes on the additional highway costs made necessary by the type of vehicle taxed.

While the theory has considerable theoretical merit, the technical problem of accurately determining the proper proportion of costs to be assigned to the different vehicle types, beginning with the passenger car and ending with the heavy commercial truck, is a difficult one, indeed. There is difficulty in determining the cost of a pavement to accommodate a passenger car if there were no heavy vehicles to be considered, and greater difficulty in apportioning the added costs to the different weight groups.

2. The Relative Use Theory (Ton-Mile Theory). This theory is based on the assumption that the taxes levied against any class of vehicles using the highway should be apportioned among the various users according to the extent to which they make use of the highways. Nine states to date have adopted the "Ton-Mile" tax in some form or other. It can, perhaps, be more definitely justified than any of the other proposed theories but it, too, is open to considerable criticism in theory and in operation.

It is argued that the number of miles a truck hauls a ton on the highway is the true measure of its use of the highway--that in hauling 1 ton of freight 10 miles, a truck gets 10 times as much service from the highways and causes 10 times as much pavement wear as does a truck hauling 1 ton 1 mile, and that it should contribute to the expense of the highway in exactly this ratio. It is an argument open to dispute, and it is at once evident that administrative costs do not increase in direct proportion to the load carried and the distance traveled, and it is difficult to prove that 10 one-ton trucks are not any more of a highway hazard than is 1 ten-ton

[illegible] organs, they occasion other highway wastes. It is [illegible] difficult to establish without further [illegible]

[illegible] of the inherent weaknesses of both the Ideman [illegible] [illegible] bare [illegible], perhaps, because of the fact that in [illegible] [illegible] becomes economically necessary, many states now resort to "[illegible] Taxes" which impose an additional tax load upon commercial vehicles. [illegible] as to why and how such additional taxes should be imposed [illegible] [illegible] advanced. A review of these theories was published, in 1956, by the [illegible] of Public Roads in its publication, "A Federal Discussion of Motor [illegible] Regulations, and Taxation," from which the following [illegible] [illegible] outline has been prepared.

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[illegible] (Equitable Theory). This theory is based [illegible] [illegible] that the based levied against any class of vehicles [illegible] [illegible] should be apportioned among the various users according to the [illegible] which they make use of the highways. The study is to date been [illegible] the "Equitable" tax in some form or other. It can, perhaps, be [illegible] [illegible] that any of the other proposed theories but it [illegible] [illegible] to considerable criticism in theory and in operation.

It is argued that the number of miles a truck hauls a ton on the [illegible] is the true measure of its use of the highway—that in hauling 1 [illegible] [illegible] 10 miles, a truck puts 10 times as much service from the [illegible] and causes 10 times as much pavement wear as does a truck hauling [illegible] 1 mile, and that it should contribute to the expense of the highway [illegible] in that ratio. It is an argument open to dispute, and it has [illegible] [illegible] equitable taxes do not increase in direct proportion [illegible] [illegible] and the distance traveled, and it is difficult to give [illegible] [illegible] trucks are not any more of a highway menace than is a ten-ton

truck.

Because of the importance of the problem and the fact that the "Ton-Mile" tax has received so much publicity and the further fact that it has been adopted in principle by a number of states and is advocated by many interested residents of this state, it is given further consideration in Chapter III herewith, entitled "The Ton-Mile Tax" in which the experience of a number of states is reviewed and arguments both in favor and opposed are presented.

3. The Operating Cost Theory. This theory is based on the assumption that the tax rate imposed on trucks should be proportioned on the basis of their operating costs. In other words, if it costs 6 cents a mile to operate a small truck and 36 cents a mile to operate a large truck, the tax assessed against the large truck should be 6 times as great per mile as that assessed against the small truck. The objections offered to this theory are that it does not accurately take into account the difference in highway costs occasioned by different vehicle types, it presents many difficulties in collection, and it is not entirely evident that operating costs are proportional to the service rendered. The system would unjustly penalize an old or inefficient vehicle.

4. The Differential Benefits Theory. This theory, as does the Operating Cost Theory, assumes that the value of the service received is the basis of taxation. It attempts, however, to measure the value of service, not on operating costs, but by calculating the benefits or savings to different sized vehicles resulting from different types of highway improvements. The concepts used are the "mileage element savings" and "time element savings." This method involves an extremely complicated series of calculations and has never been tried out in its entirety.

5. Space-Time Theory. This theory is based on the assumption that a vehicle uses only that portion of the highway which it occupies, and that highway use can be measured only by the amount of highway surface required for the operation of the vehicle. It assumes that highway design is not dependent upon vehicle weight and would not be changed if the use of the roads was restricted to light vehicles. Its authors finally conclude that "the motor fuel tax" most equitably distributes the tax burden, and that license fees should be nominal in amount and used only for identification and not for revenue purposes.

The conclusion that the gas tax most equitably distributes the tax burden is based on the following table, in which the passenger car is taken at par, for the purpose of comparison, and the relative average speed of the vehicles is assumed at 45 miles per hour for the passenger car, 41 miles per hour for the 1½ Ton truck and 37 miles per hour for the heavy truck:

(See Table on Following Page)

	Space Occupied	Time Required	Space X Time	Relative Space-Time Use	Miles Traveled per Gallon of Gas	Relative Gas Tax Paid
Passenger Car	35	1	35.	100%	12	100%
$1\frac{1}{2}$ Ton Truck	38	1.10	41.8	120%	8	150%
Truck Trailer Combination	50	1.20	60	170%	4	300%

If the figures in the table are accepted, and the space-time theory considered equitable, then the table does indicate that under a gas tax the trucks pay their just proportion of the tax load. The assumption, however, that the space utilized, alone, constitutes the only fair basis for tax assessment, and that the tax charged should not take into consideration the added cost of construction necessary to accommodation, will not receive widespread acceptance.

The authors of the theory contend that "the fuel tax besides being the easiest and cheapest to collect, distributes the tax burden according to actual use made of the highways, and should be the sole method of apportioning the tax load. It is not a sales tax, it is a use tax. It only resembles a sales tax in that is is collected from the seller. It (the amount of the tax) need not be limited to any relationship to the sale price of the fuel."

While gasoline consumption is unquestionably higher for the heavier vehicles, and a gasoline tax automatically provides a differential rate of taxation varying with the size of the vehicle, it does not fully or equitably compensate for the increased expense made necessary by the heavier vehicles. Ten light trucks, each carrying a load of one ton and traveling 10 miles, would use more gasoline and consequently pay more tax than one heavy truck carrying 10 tons and traveling the same distance, and at the same time the more heavily loaded truck would receive an equal service and might possibly cause more damage to the pavement.

There is some justification for each of the proposed theories, but all have weaknesses in theory, equity, or application, and all are naturally attacked by interests adversely affected. It should be remembered as a practical matter that the largest proportion of revenue received for highway purposes is obtained primarily from passenger automobiles and light trucks, since these two groups of vehicles constitute practically 92% of all vehicle registrations, and it will be difficult to raise a relatively large amount of revenue by additional fees on the remaining 8% made up by the heavier vehicles. It may be significant to note that states with relatively high taxes on heavy vehicles have a very small number of such vehicles registered.

The Taxing Methods of Other States

Based somewhat on one or the other of the theories outlined above, but inspired possibly more by expediency and a need to obtain additional funds for highway purposes from any source available and collectible with the least opposition, the following Third Structure Taxes are now imposed in the states as noted:

(See Table on Following Page)

STATES HAVING MILEAGE OR TON-MILE TAXES
(Not including 1949 legislation)[1]

Alabama	Property carriers - $\frac{1}{4}$¢ per mile per axle.
	Passenger carriers - according to seating capacity - 16 or less, $\frac{1}{4}$¢ per mile; 17 to 21, $\frac{1}{2}$¢ per mile; 22 to 25, 3/4¢ per mile; 26 or more, 1¢ per mile.
Colorado	Property carriers - 2 mills per revenue ton-mile.
	Passenger carriers - 1 mill per revenue passenger mile.
District of Columbia	Applies to motor vehicles for hire only (cabs, etc.) - 4/5¢ per vehicle mile.
Florida	Property carriers - Under 5,500 lbs. carrying capacity - 3/4¢ per mile. Over 5,500 lbs. carrying capacity $1\frac{1}{2}$¢ per mile.
	Passenger carriers - 10 or less, $\frac{1}{2}$¢ per mile; 10-20, 3/4¢ per mile; over 20, 1¢ per mile.
Illinois	All motor carriers - Optional fee - Either a flat rate ranging from $5.00 per vehicle for those of 3,000 lbs. or less gross weight, to $345 per vehicle for those over 50,000 lbs. gross weight, or a mileage fee ranging from 1 mill per mile at 3,000 lbs. or under, gross weight, to 28 mills per mile for vehicles over 50,000 lbs. gross weight.
Kansas	See Chapter III, "The Ton-Mile Tax."
Kentucky	Passenger carriers only - 1/36¢ per passenger seat per mile. (Other motor carriers pay an additional fee ranging from $22.00 for vehicles 5,000 lbs. gross weight or under to $300.00 for vehicles with gross weights up to 42,000 lbs.) Kentucky has no sales tax but has a motor usage tax whereby a 3% use tax is levied upon vehicles at the time of their final registration.
Maryland	Passenger carriers only - 1/30¢ per passenger seat per mile. (Local or chartered buses and taxicabs are exempt.) Maryland exempts motor vehicles from a sales tax but levies a 2% excise tax at the time of issuance of original certificate of ownership.

1): See Kansas Legislative Council Publication No. 160.

Michigan	All motor carriers - 11,000 lbs. gross weight or under - 1 mill per mile; 11,000 to 15,000 lbs. gross weight, $1\frac{1}{2}$ mills per mile; over 15,000 lbs. gross weight, 2 mills per mile. Gross weight for passenger carriers computed on the basis of the weight of the vehicle plus 150 lbs. for each passenger, including driver.
Minnesota	Interstate carriers only - Optional fee - Either a graduated mileage tax beginning at $\frac{1}{4}$¢ per mile at 3 tons unladen weight to 4¢ per mile for trucks or combinations over 10 tons unladen weight; or the same fees for comparable trucks or truck combinations registered in Minnesota.
New Jersey	Interstate buses only - $\frac{1}{2}$¢ per mile operated within the state. (This tax does not apply to motor carriers operated by companies which are paying the 5% gross receipts tax.)
New Mexico	Property carriers - 1/8¢ per mile for carriers $1\frac{1}{2}$ tons or less carrying capacity to $1\frac{1}{2}$¢ per mile for carriers over 5 tons capacity. Passenger carriers - 1/8¢ per mile for a capacity of 7 passengers or less to 1¢ per mile for buses carrying more than 25 passengers. (Non-registered or non-resident commercial motor carriers for either passengers or property pay at the rate of $1\frac{1}{2}$¢ per mile for vehicles less than 15,000 lbs. gross weight, to 3¢ per mile for vehicles of more than 25,000 lbs. gross weight.)
North Dakota	(Truck Mile Tax) - Interstate property carriers only - $\frac{1}{4}$¢ per mile for vehicles 3 tons or less unladen weight, to 4¢ per mile for vehicles 10 tons or over unladen weight. (However, this tax is not required if registered for intra-state or operating under a reciprocity agreement.)
Oklahoma	Passenger carriers only -

Passenger Capacity	Rate
7 passengers or less	3 mills per mile
8-11 passengers	5 mills per mile
12-17 passengers	7 mills per mile
18-23 passengers	9 mills per mile
24-29 passengers	11 mills per mile
30-36 passengers	$12\frac{1}{2}$ mills per mile
Over 36 passengers	15 mills per mile

Oklahoma (Continued)	Other motor carriers pay truck fees ranging from $20.00 to $445.00.
Oregon	All motor carriers - 6 mills per mile for vehicles with a declared weight of 4,500 to 6,000 lbs., ranging up to 36½ mills per mile for vehicles with a declared weight of 48,000 lbs. or over. (Against this tax is credited any gas tax paid on fuel consumed in connection with taxable mileage.) In lieu of the above, property carriers may pay a flat annual fee as follows: For vehicles 4,500 to 6,000 lbs declared weight, 45¢ per hundred lbs.; 6,000 to 12,000 lbs., 70¢ per hundred lbs. (This fee is in addition to any gasoline tax paid on motor fuel in Oregon.)
South Carolina	Property carriers - 1/10¢ per ton mile based on the weight of the load only, with a schedule of minimum fee ranging from $15 for trucks not over 2,000 lbs. carrying capacity to $250 for trucks up to 12,000 lbs. carrying capacity. Passenger carriers - under 13,000 lbs.gross weight 1/50 per mile - over 13,000 lbs. gross weight 1/40¢ per mile The schedule of minimum fees also applies, ranging from $30 for carriers with a capacity of seven passengers or less to $90 for carriers with a capacity of over 27 passengers. (The ton mileage tax applies to all motor carriers except those operating exclusively within cities.
South Dakota	Inter-state property carriers only - Optional fee - Either the flat additional fee for all motor carriers in South Dakota which ranges from $15 for trucks 2 tons or less gross weight to $525 for trucks 20-22 tons gros weight, or 2 mills per ton mile traveled within the state. Other property carriers pay the flat additional fee. Passenger carriers - Additional tax of 60¢ per month per passenger seat or if operated seasonally may pay ½ mill per passenger mile.
West Virginia	Common carriers only. Property carriers - 1¼ mills per capacity ton mile. Passenger carriers - 1/3 mill per passenger seat mile. (These are in addition to special license fees required of all commercial carriers.) West Virginia exempts mot

West Virginia (Continued)	vehicles from a sales tax but they are subject to a $\frac{1}{2}$ of 1% business and occupational tax and the state also imposes a 2% privilege tax upon issuance of certificate of title.
Wisconsin	Motor carriers - Optional fee - An annual flat fee as follows: Property carriers - the fee ranges from $20 (paid quarterly) for vehicles less than 4,500 lbs. gross weight to $420 on vehicles 20,000 lbs. gross weight or more, plus $30 for each ton over 28,000 lbs. Passenger carriers - $30 per ton (paid quarterly.) All carriers may pay in lieu of the above a mileage tax as follows: Less than 14,000 lbs. gross weight - 1 mill per mile 14,000 to 20,000 lbs. gross weight - $1\frac{1}{2}$ mills per mi More than 20,000 to less than 24,000 - 2 mills per m 24,000 or more $2\frac{1}{4}$ mills per mi
Wyoming	Carriers weighing more than 3,500 lbs. unladen weight only - Property carriers - straight trucks 1 mill per ton mile of unladen weight. Trailers (other than semi-trailers) - 2 mills per ton mile. Semi-trailers - $1\frac{1}{4}$ mills per ton. Passenger carriers - $\frac{1}{2}$ mill per passenger mile. (In addition to the above, motor carriers using fuels other than gasoline pay the Public Service Commission a tax of 4¢ per gallon on all motor fuel used.)

In addition to these passenger car and truck fees (Third Structure Taxe six states have special single or occasional trip fees for non-resident passenger cars which are based on mileage, and 4 states have special single or occasional trip fees for non-resident trucks based either on a ton-mile basis or a straight mileage basis. Texas has neither a ton-mile nor a sales tax, but it imposes a 1.1% tax on the sale or transfer of title of motor vehicles. Gasoline is exempt from a sales tax in most states having sales taxes.

The foregoing review of the motor vehicle fees now imposed by the sever

vehicles from a sedan car but they are subject to a ½ of 1% business and compensation. [illegible] also imposes a 3% gross receipts tax upon insurance of certificates of title.

Motor carriers - Optional fee. An annual fee is levied:

Transport carriers - for the region from $10 (gold quarterly) for vehicles less than [illegible] up to $[illegible] on vehicles over 20,000 lbs. gross weight or more, also $20 for each ton over 20,000 lbs.

Passenger carriers - $30 per ton (gold quarterly).

All carriers may pay in lieu of the above a license tax as follows:

Over 10,000 lbs. gross weight - 1 cent per mile
14,000 to 20,000 lbs. gross weight - 1½ mills per mile
Over 20,000 to 30,000 - 2 mills per mile
30,000 or more - 2½ mills per mile

[illegible]

Passenger carriers - [illegible] per mile or [illegible] per hour.

Trailers (other than semi-trailers) - 2 mills per ton [illegible]

Semi-trailers - 1½ mills per ton.

Passenger carriers - ½ mill per passenger mile. (Mills in addition to the above, minor [illegible] other than gasoline per the gasoline equivalent [illegible] or [illegible] on all motor fuel used.)

[illegible]

[illegible] motor vehicles [illegible] or general [illegible] from [illegible] passenger [illegible] are taxed on a [illegible] basis [illegible] 4 cents [illegible] equivalent [illegible] for non-resident [illegible] based [illegible] on a [illegible] basis. [illegible] motorcycle [illegible] per [illegible] $1.50 [illegible] on the [illegible] or tractor [illegible] motor vehicles. [illegible] from [illegible] [illegible] have been [illegible] by the [illegible]

states is surely sufficient to show the lack of uniformity and the great difference of opinion as to the theory upon which a proper system of "Third Structure" fees should be based. Experience to date has not been sufficient to prove that any one of the systems now in use is greatly superior to the others, and it will probably be some years before an equitable and practical system will be developed upon which most states will agree.

Items of Cost Not Considered by Any Proposed Third Structure Tax System.

The attempt to establish a practical system of motor vehicle taxation brings with it many problems that none of the systems now proposed completely solves. Should there be a difference in the tax rate charged highway users reflecting the difference in value of the goods transported? Probably not, although the railroads and the trucking industry itself take into account such difference in establishing their freight rates. Does it cost as much to provide and service highways to carry a ton of lead as it does a ton of feathers? Probably less, since manifestly, a moving van with a ten-ton carrying capacity takes up more room and constitutes a greater traffic hazard than does a transport truck carrying 20 tons of steel, yet most of the "Third Structure" taxes in use charge the heavier load-carrying capacity truck at a higher rate than they do the van of smaller load-carrying capacity, presumably upon the premise that the heavier loaded truck does more damage to the road or that roads designed to carry heavy trucks cost more to construct. If the premise is sound, then each passage of the heavy truck will damage the road and eventually destroy it, in which case should the rate charged fully compensate for the ultimate destruction of the entire road, or should not the use of such trucks be confined strictly to highways constructed to carry such traffic and the tax against the heavy truck consider only the extra cost of roads it is allowed to travel? Many of the state's highways now in use are not designed or constructed to carry the loads to which they are subjected and which are permissible under present load limitations.

Money invested in plant and equipment by private concerns is considered by them as a capital asset against which they charge depreciation each year and they very properly anticipate a profit on the unamortized balance. There are some who contend that since the state has a large investment in its highways, it should consider this investment the same as would a private concern and that interest on the unamortized highway investment should be taken into account in determining the taxes or fees assigned to the different classes of motor vehicles.

There are others who contend that the property tax the state loses by reason of its owning the highway right-of-way should also be considered in determining the tax assigned to commercial users of the highway. Proponents of this suggestion refer to such taxes as "A Property Tax Equivalent" or "Escaped Taxes." It cannot be denied that the extensive taking of improved property for highway purposes removes it from the tax rolls and the state suffers a considerably reduced income from what it would if the right-of-way were privately owned. There is an inequity to be considered since the

railroads pay property taxes on their trackage and right-of-way while the state furnishes, free of taxes, a right-of-way for the trucking industry.

The questions as to whether or not interest on money invested in the highways, as well as "Escaped Taxes," should be considered in fixing tax rates are highly debatable. There is unquestionably some merit in each suggestion. On the other hand, an interest charge on the "unamortized balance" brings with it many other difficult questions, i.e. since the state owns the highways and they are paid for upon completion, just what is the "unamortized balance" and at what rate shall it be amortized? What interest shall be charged? Since there is no real debt, can interest be charged on an imaginary debt and would not the proposed charge in reality be nothing more than a toll? Perhaps a fixed and constant rental charge, designed to write off the entire highway cost in say, fifty years, would be more in order.

Again, if "Escaped Taxes" are to be considered, the loss in property tax is not chargeable in its entirety against the commercial vehicle, but would in justice be collected from all users of the highway. Many state-owned highways are not used by heavy commercial trucks and tax rates including interest charges and "Escaped Taxes" on such roads should not be charged against such trucks. It should further be considered that property taxes are not allocated for the benefit of the highways and if "escaped Taxes" are to be taken into account in determining taxes on motor vehicles it would result in taking money that would regularly go into the general fund and allocating it to the highways.

These questions of interest and "Escaped Tax" charges are of a highly controversial nature on which there is at present no unanimity of opinion. They will undoubtedly receive study and consideration by more competent authority in the years ahead and the discussion herein was included merely to emphasize the difficulty of determining equitable and sufficient "Third Structure Taxes".

A Statement of Principles

It would appear to be a logical procedure and a matter of first consideration, in attempting to determine a generally acceptable theory of motor vehicle taxation, to establish and adopt a code or statement of principles upon which to base such a system, and the following statement of principles is proposed:

1. The construction, maintenance, and administration of highways included in the state highway system is an obligation of the state government. Highways and roads not so included are the obligation of the counties or other local governments.

2. State highways are constructed and maintained for the benefit of

the entire public and not for the special service of any particular group.

3. The passenger automobile, for whose accommodation the highways of the state were originally built, is entitled to prior consideration and preference in all matters of design, road use, safety provisions, and traffic regulations.

4. Motor truck transportation has been accepted as having a right to use the highways, and ample provision must be made in highway design and construction for the accommodation of such traffic.

5. The cost of construction, maintenance, and administration of state highways shall be paid in its entirety, aside from federal aid, by those who use the highways, and no contribution shall be required from other sources.

6. All charges made against motor vehicle owners for their use of the highways should be credited to the highway program and not be diverted to any other purpose.

7. Taxes necessary for the support of the state's highway system shall be secured by separate impositions classified as follows:

(a) 1st Structure Taxes, Registration Fees, equitably proportioned on the basis of gross weight (vehicle weight, plus rated capacity) and charged against all users of the highway.

(b) 2nd Structure Taxes, Gasoline and Other Fuel Taxes to be charged at the same rate to all users of the highway.

(c) 3rd Structure Taxes, (1) to cover the additional cost of highway construction and maintenance and extra service necessitated, (2) to compensate for privileges granted and any expense or loss incurred by the state, and (3) to compensate for burdens imposed upon the private automobile--all as occasioned or made necessary for the accommodation of the commercial vehicle--such taxes to be equitably apportioned among the different classes of commercial vehicles in accordance with their separate responsibilities.

8. License Fees, as originally intended, were designed to provide funds necessary to cover the state's cost of administration and supervision of the highways. A fee, by its very definition, is a charge intended to provide funds necessary to cover the cost of providing a service or privilege and when charged in an amount sufficient to return funds in excess of cost, it no longer remains a fee but becomes a tax levied for revenue purposes. As of today, practically every state collects license fees greatly in excess of the cost of highway administration which excess

hazards, thus causing more accidents and preventing the full and unrestricted use of the highways for the purpose for which they were originally built. Mr. Thomas H. MacDonald, Commissioner of the Bureau of Public Roads, is responsible for a statement that in the matter of reducing highway vehicle capacity by slowing up traffic, one truck is the equivalent of two passenger cars on level roads and the equivalent of from 4 to 5 passenger cars in rolling country.

3. The state does not provide a right-of-way for any form of transportation other than the trucking industry and overland buses which use a publicly provided facility for the purpose of making a profit. A similar charge can be made against other privately-owned institutions who use municipally-owned facilities for power, water, etc., but in these cases they pay for the services they receive in an amount at least theoretically equal to the cost of the service, and there can no longer be a reasonable objection to the use of the highways by the trucking industry and overland buses if they, likewise, pay the full cost of the services they receive from the state, and are not granted privileges without charge that are not granted other forms of transportation.

4. It may be argued that everyone benefits from an adequate highway system and that, therefore, everyone should contribute in some degree to its expense, whether he owns an automobile or not. However, since any charge made against the trucking industry is properly included by it as an item of cost and is reflected in hauling rates which are paid by the public, it may be said that, in the final analysis, everyone does contribute to the cost of the highways. It may be interesting to note that a suggestion was made to the 1948 Highway Committee by those who evidently were of the opinion that motor vehicle owners were sufficiently taxed, that additional funds for highway purposes should be raised by means of a poll tax on all adult citizens of the state and in the amount of from $5.00 to $10.00 per head.

5. Since the public pays the bill, any increase in fees can only be objected to by the trucking industry on the ground that such increases would compel it to raise its hauling rates, and thus lessen its present competitive advantage over other forms of transportation. Fees charged the trucking industry that do not fairly compensate for the cost of the service received, therefore, work an unfair hardship upon other forms of transportation. The Interstate Commerce Commission reports that the average ton-mile freight rate of the railroads increased 142.6% in the period between 1942 and 1950, while in the same period that of common and contract truck carriers only increased 138%. The railroads' greater increase can in part be accounted for by the increase in right-of-way and trackage property taxes which are not paid by the trucking industry.

6. The federal government until recently imposed a 1½ cent per gallon tax on all gasoline produced in the nation, a tax which was

[illegible] is for a statement that in the matter of reducing highway [illegible] by diverting up traffic, one truck in the equivalent of two passenger [illegible] trucks and the equivalent of from 4 to 5 passenger cars [illegible] [illegible].

[illegible] The state does not provide a right-of-way for any form of transportation [illegible] other than the trucking industry and overhead [illegible] [illegible] provided liability for the purpose of making a profit. A [illegible] [illegible] be made against other privately-owned institutions [illegible] [illegible] facilities for power, water, etc., but it [illegible] [illegible] [illegible] they receive in an amount at least proportional [illegible] [illegible] of the service, and there can no longer be a reasonable [illegible] [illegible] of the highways by the trucking industry and [illegible] [illegible], pay the full cost of the services they receive [illegible] [illegible] are not granted privileges without charge that are not granted [illegible] [illegible] of transportation.

[illegible] It may be argued that overpass facilities from an adjacent [illegible] [illegible] and that, therefore, overpass charges should be [illegible] [illegible] equipment, whether be owned or otherwise or not. [illegible] [illegible] [illegible] made against this secondary industry is primarily [illegible] [illegible] of cost and is reflected in [illegible], when which are paid by the [illegible], it may or may not that, in the final analysis, overpass [illegible] [illegible] to the cost of the highways. It may be interesting to note that [illegible] [illegible] made to the 1947 Highway Committee by those who [illegible] [illegible] of the opinion that motor vehicle [illegible] multiplicity [illegible] [illegible] additional funds for highway purposes should be raised [illegible] [illegible] over an all public citizens of the state and in the amount of [illegible] [illegible] to $10.00 per head.

[illegible] Since the public pays the bill, any increase in road use [illegible] [illegible] to by the trucking industry on the ground that such [illegible] [illegible] would compel it to cease its hauling [illegible], and also [illegible] [illegible] [illegible] advantage over other forms of transportation. [illegible] [illegible] [illegible] liquidity that do not fairly [illegible] for the use of the [illegible] [illegible], therefore, must an undue burden [illegible] [illegible] [illegible]. The Interstate Commerce Commission reports that [illegible] [illegible] ton-mile freight rate of the private truck industry [illegible] [illegible] between 1946 and 1950, while in the same period that of common [illegible] truck carriers only increased 1.9%. The individual [illegible] [illegible] to pass to passenger for the increase in [illegible] [illegible] property taxes which are not paid by the trucking industry.

[illegible] The Federal government until recently [illegible] a [illegible] [illegible] [illegible]

increased to 2 cents per gallon in 1951, and the revenue from this tax is credited to the general fund and does not contribute directly to the highway program. If the federal government could be persuaded to withdraw from this field of taxation, it would provide a way for the states to increase their revenues applicable to highway purposes without additional burden on the motor vehicle owner.

Federal Excise Taxes paid by the motor vehicle owner are as follows:

	As of 1950	Revised 1951
Automobiles.....	7% of the manufacturer's sale price	10%
Trucks, Buses, Tractors and Trailers.....	5% of the manufacturer's sale price	8%
Tires.....	5¢ per pound	(no change)
Inner tubes.....	9¢ per pound	(no change)
Parts and Accessories.....	5% of manufacturer's price	8%
Gasoline.....	1½¢ per gallon	2¢
Lubricating oil.....	9¢ per gallon	(no change)

It is interesting to note that in 1949 the federal income from the excise taxes noted above and collected from motor vehicle owners amounted to $1,304,000,000.00 and that in that year the total federal aid paid to the states for highway construction purposes amounted to $450,000,000.00. Federal aid, therefore, was not an act of benign charity, but a profitable transaction by which the federal government gained $854,000,000.00, or nearly twice the amount it paid back as aid to the highways. This excess went into the general fund and in no way benefited the highways, and is a charge against vehicle owners for the support of governmental activities not paid in comparable amount by any other form of personal property.

Nebraska's motor vehicle owners, in 1950, paid a total of $14,421,000.00 in excise taxes to the federal government (see "Automobile Facts and Figures," page 56) and it has been noted that over $500.00 in federal excise taxes is included in the first $2,000.00 paid on the purchase of a new car by an American citizen. The question may well soon be not whether we can afford adequate highways, but rather can we afford to drive an automobile.

The following statement was made in the January publication of one of the state's most important financial institutions:

> "To an increasing extent, taxes paid by motorists are being diverted to non-road purposes. Figures compiled recently by the American Petroleum Institute showed that in 1950, 8.4 per cent of taxes levied on motorists were used by the taxing authorities for purposes having nothing to do with improvement of motoring conditions.

In some states, the diversion was nearly 50 per cent.

"This year, collections have been heavier and the volume of highway construction has been smaller, due to materials shortages. Therefore motorists, as such, will have borne an even heavier share of the general costs of government."

A joint conference of Representatives of Congress and State Governors in Chicago on September 27, 1947, recommended that "The Federal Government should reduce Federal Excise Taxes as soon as practicable and that special consideration should be given to local telephone calls, intrastate electrical energy, gasoline and admission taxes," but the new excise taxes imposed by the 1951 Congress can be expected to increase the federal intake by 33 1/3% and add an increased tax burden upon the motor vehicle owner without further benefit to the highways.

In addition to excise taxes on motor vehicle equipment, the federal government collects 15% on all passenger fares and 3% on all freight bills from buses, truck transportation companies, railroads, airlines, and waterways alike. The total revenue obtained from these sources was not available but it is a large amount, and such taxes are a deterrent to travel and a handicap upon all business.

7. The question as to whether or not motor vehicles of different types and capacities contribute their fair share of the total vehicle tax burden was studied by direction of the Congress by the Federal Coordinator of Transportation and also by the Board of Investigation and Research. Both submitted reports in 1940. The Federal Coordinator based his investigation on the Differential or Increment Theory and the Board of Investigation and Research based its study on the Relative Use or Ton-Mile Theory.

The Federal Coordinator reported that passenger cars, buses (with the exception of school buses) and commercial trucks of 1½ ton and less capacity paid slightly more than their just proportion of costs, and that all other classes of vehicles, including farm trucks, failed to meet their obligation by amounts varying in percentage from 22 to 30%.

The Board of Investigation and Research reported that inter-city buses, farm trucks and all single-unit trucks failed to pay their just proportion of costs by amounts varying from 13 to 30% and that truck-trailer combinations failed in the amount of 37%.

These reports are of questionable value since they are out-of-date and are based on the average charges of 48 states, which differ greatly from those applicable in Nebraska, but they at least indicate that the charge that many classes of vehicles escape paying their just tax is justified, and while taxes have increased materially since 1940, construction costs have increased in greater proportion, and the chances are that the failure to pay just costs is not much different today from what

it was in 1940.

8. While the motor fuel tax and the license fee system of providing funds for the support of a highway program have many advantages, it is evident that these charges do not necessarily result in an entirely equitable distribution of the tax load, and that there is ample justification for the imposition of other "Third Structure Taxes." However, until experience in other states has succeeded in developing a practical system of such taxes, Nebraska might well confine its method of motor vehicle taxation to the motor fuel tax and the license fee and not add further to the lack of uniformity with its resulting confusion and inequalities.

9. Registration fees for farm and local trucks in Nebraska are now based on manufacturers rated capacity while in the case of commercial trucks, they are based on the actual load to be carried. Fees based on rated capacity plates permit farm trucks to carry heavier loads without paying the applicable fee charged commercial trucks.

Gross weight (vehicle weight plus load carried) would seem to provide a more realistic basis for fee determination and is the basis now in use in most states. The establishment of uniform standards of applying gross weight vehicle ratings to all trucks has been under consideration by state and federal authorities, aided by the motor transportation industry, for some time, and it is to be hoped that such a standard rating system can soon be adopted and followed by all states.

10. The lack of uniformity in fees charged by the states is a matter to be greatly deplored, and constructive effort tending to bring about uniformity should be undertaken. There is no logical reason why a truck should be charged 2 mills per ton-mile in South Dakota and $\frac{1}{4}$ cent per mile per axle in Alabama. Such differences in rates are bound to have some effect upon the location of industries and upon the operation of industries wherever now located. A movement in this direction might well be sponsored by the Council of State Governments, and the adoption by the Council of a statement of principles upon which such uniform charges should be based, might be a matter worthy of its consideration.

11. Third Structure Taxes, when imposed, will necessarily differ as between states because of the great differences in the number of trucks registered in the different classifications, but an effort should be made to obtain as near uniformity as is possible in order to prevent undue discrimination, vindictive, retaliatory legislation, and the wholesale changes in truck company domestication as is now taking place.

12. The completion of an adequate system of highways presents a particularly difficult problem in Nebraska. The state is the 16th state of the Union in the matter of area, the 33rd state in population, and the 8th state in the matter of road mileage. It has an exceptionally large system of waterways which necessitate unusual expenditures for bridges,

and in the number of inhabitants per mile of planned state highways, Nebraska ranks among the lowest states in the nation.

13. The cost of highway maintenance will increase with each mile of new highway added to the state highway system. Some years ago Nebraska constructed many miles of inadequate, poorly designed, black-top roads and there is an ever-increasing mileage of existing roads becoming obsolete and requiring replacement or expensive repair. A State Highway Department official recently stated that 2,000 of the state's 3,000 miles of bituminous roads need reconstruction, since they do not have sufficient strength to support the traffic they carry, that much of the 1,400 miles of concrete roads need resurfacing and constant repatching, and that 5,000 miles of gravel roads need modernization. The cost of maintenance can be expected to increase each year for at least the next decade. Maintenance costs already require a large portion of the funds available for highway purposes, and a further increase in such costs will add to the necessity of increased revenue if new construction and additions to the state highway system are not to be virtually eliminated.

14. Taking into consideration the depreciated value of the dollar and its present purchasing power, less real money is spent on our highways today than was spent 5 years ago; construction costs have increased about 78%; the nation's highway expenditures in 1945 equalled about 3% of the national income and today it amounts to less than 1½%.

15. Prior to 1928 Kansas had an assessment benefit district system for local roads. The districts were organized by petition of 51% of the resident landowners owning at least 35% of the land within the district or signed by 35% of the resident landowners owning 51% of the land within the district or signed by owners of 60% of the land within the district. After the district was organized the county commissioners made the road improvements specified in the petition.

The cost of construction was apportioned as follows: First there was deducted the amount of federal or state aid received and the remainder was charged 50% to the county, 25% to the township and the remaining 25% to the property owners in the district according to a scale of benefit, based on distance from the road. Most of the roads so constructed were financed by bond issues but could be paid for by special tax levies as the construction progressed. A substantial road mileage was constructed under this law. A notable example being the highway from Fort Leavenworth to Fort Riley.

Other states, including Iowa, have had similar road districts, or Benefit District Plans, and it is reported that Oregon is now considering charging local landowners part of the cost of a state highway passing their property, but no recommendation in the matter has at this time been presented.

After the adoption of an amendment to its constitution in 1928, Kansas took over the construction of a state highway system, the roads being paid for from registration fees and gasoline and ton-mile taxes. Consequently it was felt that landowners should not be charged for the cost of roads incorporated in the state highway system and, in 1933, the Legislature authorized the repayment of such costs and these costs have been paid back by the state at the rate of about one million dollars per year.

16. The following data are presented with the hope that they will be of some value in considering the necessity and the problem of increased revenue for highway purposes:

During the eleven months ending November 30, 1950, a gasoline tax of six cents per gallon and greatly increased license fees were in effect in Nebraska due to the enactment in 1949 of LB-399 and LB-401--bills repealed in 1950 by referendum vote. During the time the six-cent rate was in effect, $3\frac{1}{2}$ cents per gallon was allocated to state highway purposes as against the $2\frac{1}{2}$ cents now allocated from the current 5-cent tax, and in addition a considerably increased allocation was received from the increased license fees. As a result, approximately $5,200,000 more was available for highway construction in 1950 than can be anticipated in 1952. Expenditures for 1950 amounted to $20,398,239.91, the greatest expenditure for highway purposes during any year in Nebraska's history. A breakdown showing how the money was spent, follows:

Administration and Operating Overhead	$ 499,920.79
Highway Construction (new)	12,673,733.15
Stop-Gap Construction	681,089.67
Highway Maintenance	6,511,430.63
Equipment, Lands, Buildings, etc.	19,755.12
Weighing Stations	9,643.33
State Aid Bridge Maintenance	2,667.22
Total	$20,398,239.91

Stop-gap construction not participating in federal aid was necessary to provide temporary improvement on some roads until permanent construction can be furnished. Other construction expenditures included flood relief, weighing stations, center marking, road signs, snow removal, etc. During the year the state completed the construction of 563.7 miles of highways. Of this amount, 114.8 miles were "new" roads, and the remaining 448.9 miles represented roads that were "reconstructed." It would appear to be a reasonable conclusion, based on the facts summarized above, that if it is the state's desire to accelerate its highway program and complete an adequate system of roads within a reasonable time, the revenue available in 1950 is a reasonable measure of the minimum funds that will be necessary each year until it can be increased by practical and

equitable methods from sources other than the gas tax and license fees.

17. The comprehensive outline of a completed highway program as presented by the Nebraska Highway Advisory Committee in 1948 is well adapted to the needs of the state and should be followed. While the location and type of roads contemplated by this report may be disputed, and changes therein can be anticipated, any change will probably increase the mileage and the expense of construction as estimated by the report.

18. If it is concluded that Nebraska is in need of and desires an accelerated program, then it must further be concluded that the revenue available from present sources at present tax rates is insufficient, and that a yearly increase of at least 5 million dollars should be anticipated and provided for. This amount could probably be obtained by legislation similar to LB-399 and LB-401, as enacted by the 1949 Legislature (but later repealed by vote of the people) with such changes as might be indicated by the practices of other states.

19. It is doubtful if Third Structure Taxes levied on certain classes of commercial vehicles, while they may be justified as a matter of equity, would in themselves, alone, bring in additional funds in amounts sufficient to support a reasonably accelerated program unless they were levied at a confiscatory rate, and such taxes, if imposed, should be designed to distribute the tax load on the different vehicle classifications in proportion to the service each receives, and the burden of the load not placed on any certain type of vehicle simply because it is assumed it would "squawk" the least or that its protest would be least effective.

CHAPTER III

THE TON-MILE TAX

The additional facilities and services necessary to accommodate the ever-increasing demands of truck and passenger traffic upon the highways, together with increased construction costs have brought about conditions under which the need for additional revenue has become acute in every state of the Union. In addition, there is an ever-increasing conviction that trucks using the highways are not paying their just proportion of the costs and as a consequence, "Third Structure Taxes" of some description have been imposed in some states and are under consideration in many others.

No two states have to date adopted the same or even very closely related charges, but of all the third structure tax proposals to date, the "Ton-Mile" theory has been most favorably received, and a number of adaptations are in operation in at least nine states of the Union.

Many Nebraska citizens are convinced that some new form of tax is needed to provide increased revenues for highway purposes, and a decided interest has been shown in the ton-mile tax, for this reason this chapter of the report is devoted to its discussion, and all pertinent information available regarding it is presented, including arguments both in favor and opposed.

The ton-mile tax is based on the theory that the number of miles a truck hauls a ton on the highway is the criterion on which a special service tax should be based, and charges in practice vary from $\frac{1}{2}$ mill per ton-mile on all trucks in Kansas to 28 mills per ton-mile on certain classes of trucks in Oregon and Illinois. There is a difference between the ton-mile tax and the so-called "weight-distance" tax. The ton-mile tax has two variables, i.e. the tons carried and the miles traveled. The "weight-distance" tax has but one variable, i.e. the distance traveled, the weight being fixed at the weight of the vehicle, plus the load it is designed to carry.

Variations of the ton-mile tax are in operation in 4 of the 6 states bordering on Nebraska; namely, in Kansas, Colorado, Wyoming, and South Dakota. Since the Kansas law has been more often referred to in local discussions, an abbreviated synopsis of the law, as now in effect, is presented herewith.

The Kansas Ton-Mile Law

The ton-mile tax in Kansas is administered by a special commission known as the "State Corporation Commission." This Commission consists

of three full-time members appointed by the Governor. They serve staggered terms of 4 years each. This Commission replaced, in 1933, a former Railway Commission, a Court of Industrial Relations, and a Public Utilities Commission, and it assumes the duties of all of these former agencies.

Assessment: In addition to all other fees or taxes imposed upon public and contract motor carriers of property or passengers and private motor carriers of property, Kansas assesses a tax of $\frac{1}{2}$ mill per gross ton-mile, computed as follows:

a. The minimum seating capacity of the commercial passenger carrying vehicle is estimated at 150 lbs. per seat to obtain the load weight; to this is added the weight of the vehicle and this total weight in tons is multiplied by the number of miles operated and the amount divided by 200 to obtain the tax.

b. 200% of the rated capacity in tons of each property carrying vehicle plus the weight of the vehicle in tons is multiplied by the number of miles traveled and the amount divided by 200 to obtain the tax.

Annual Deposits: All owners of vehicles subject to the ton-mile tax are required to make annual deposits as follows:

Deposits made during the first half of the year are made in the amount of $10.00 for each vehicle of 3 tons capacity or less plus $3.00 for each additional ton over 3 tons capacity.

Deposits made during the third quarter of the year are made in the amount of $20.00 for each vehicle of 3 tons capacity or less, plus $6.00 for each additional ton over 3 tons capacity.

Deposits made during the fourth quarter of the year are made in the amount of $15.00 for each vehicle of 3 tons capacity or less, plus $4.50 for each additional ton over 3 tons capacity.

Monthly Reports: Every motor carrier must keep daily records and on or before the 15th day of every month he must file a certified report, under oath in such form as may be required, showing the ton-miles traveled during the preceding month.

Authority: The commission is empowered to enforce all provisions of the act, to inspect all carrier records and to expend such money as may be necessary for these purposes, the total sum thus expended not to exceed 20% of the total gross sum collected under the act.

Fees Due: All fees due under the act for each month must be paid by the 15th day of the following month and if not then paid they are subject

to an additional charge of one-twelfth of ten per cent for each month delinquent. Fees not paid on time constitute a lien upon all personal property of the delinquent, and also upon all vehicles leased by him in his business, and may be sold in accordance with the law applicable to personal property taxes.

Distribution of Money: The money received under provisions of the act is distributed as follows:

10% To the State Corporation Commission for Administration

$490,000.00 To the State Highway Patrol

Balance To the Highway Fund of the state

Exemptions: All private owners who operate within a radius of twenty-five miles of their headquarters city, and farmers transporting their own livestock or farm produce to market or supplies for their own use are exempted from the provisions of the act.

Violations: Any person who violates the act or fails to obey any order of the Commission is, upon conviction, subject to a fine not to exceed $500.00.

It should be noted that the Kansas rate on trucks is based on rated capacity and permits of overloading, and is applicable whether the truck is loaded or empty, and the ton-mile rate in other states operating under a ton-mile law is ordinarily based on either revenue ton-miles or gross weight.

Revenues and Cost of Administration of the Kansas Ton-Mile Tax

During the eleven-year period 1941 to 1951, inclusive, the State of Kansas collected a total of $20,429,746.51 from the operation of its Ton-Mile Tax Law.[1] The amounts collected, by fiscal years, are shown below:

1941	$ 1,505,162.39
1942	1,607,266.38
1943	1,412,290.61
1944	1,340,126.93
1945	1,278,647.70
1946	1,405,918.67
1947	1,759,481.56

1): Information supplied by the Kansas Legislative Council in a letter dated October 1, 1951.

1948	$ 2,086,934.89
1949	2,347,646.67
1950	2,678,569.59
1951	3,007,701.12
Total	$ 20,429,746.51

From these amounts there must be deducted the cost of collection.

According to an anaylsis made by the Kansas Legislative Council, it is impossible to say exactly how much it costs to administer this law. Approximately 20% of the proceeds of the tax are credited to the Corporation Commission and the State Highway Patrol, which agencies are charged with the administration of the tax, and some persons, therefore, place the cost of the administration at 20%. The analysis points out, however, that not all of the money thus credited is expended for this activity since these agencies have other duties as well. The analysis concludes that the actual cost of administration is probably between 10% and 12½%, but admits that no complete agreement can be reached as to the exact figure, since the Commission has other duties not connected with the highways. The law presents another instance where money collected from the highway users is not used for the benefit of the highways.

It is evident, from a study of the Kansas returns, that a similar tax imposed in Nebraska would not in itself bring in additional funds sufficient to finance an adequate highway program, and that increased funds from other sources would still be necessary to accomplish this purpose.

History of the Kansas Law

The Kansas original Ton-Mile Law was enacted in 1931 and has remained virtually unchanged since that time. It replaced a schedule of additional license fees imposed on all common and contract carriers of passengers or property which had been established in 1925. These replaced fees were rather high at the time they were replaced and ranged for property carriers from $40.00 for trucks with a rated capacity of 1-3/4 tons or less, to $200.00, for those with a rated capacity of more than 3½ tons. These replaced rates were very much higher than those now in effect in Nebraska, and they were even somewhat higher than those proposed by the Nebraska Legislature in 1949.

Kansas ton-mile tax rates, as far as property carriers are concerned, are in general lower than those in any other state operating on a ton-mile basis. However, in a few states, the ton-mile rate for passenger carriers is lower than in Kansas. Six separate attempts, since its imposition, have been made to raise the ton-mile tax rate in Kansas, but all have failed. Three of the proposed bills would have raised the rate

to 2 mills, two would have raised it to 1 mill and one would have raised it to 5 mills. In 1949, a bill was introduced to repeal the ton-mile tax, but it was killed in Committee.

Practice of Other States

An abbreviated synopsis of rates and regulations now in practice in states imposing a mileage, ton-mile or other similar third structure tax is included in Chapter II of this report entitled "Motor Vehicle Taxation."

Objections to the Ton-Mile Tax

1. The first objection is that the theory upon which the tax is based is not logically sound in that the number of miles a vehicle hauls a ton on the highway is far from constituting a complete measure upon which to base a special service vehicle tax:

   a. It does not take into account the cost of special facilities necessary to accommodate heavy vehicles without involving a large number of rate differentials, all of which must be based on mere assumptions.

   b. It does not take into account the space requirements of the different classes of vehicles.

   c. It does not compensate for the harassment suffered by the private automobile driver, or the increased driving hazards occasioned by the different classes of vehicles.

   d. It does not take into account interest or "Escaped Taxes," while on the other hand, it unjustly assesses administration and maintenance costs, at the same rate, against all classes of vehicles.

2. Joseph B. Eastman, former Federal Coordinator of Transportation, in rejecting the ton-mile theory, made the following statement:

> "The principal merit in the Ton-Mile Method, but which does not suffice to commend its use, is its ease of computations. There is no evidence which convincingly indicates that for every element of (highway) cost, the charge should progress upward as weight and mileage increase. The Ton-Mile theory ignores the effects of differences in the ways in which loads are transferred to the pavement and in the utilization of road facilities. It has, therefore, no merit."

3. It can be granted that distance traveled is one measure of the service received by a truck traveling the highway. The charge against such trucks to compensate for increased weight should be primarily

proportioned to the added cost of pavement construction necessary to their accommodation. Manifestly, the added cost of pavement to accommodate a $1\frac{1}{2}$ ton truck is less than that of a 10 ton truck, a fact which a flat ton-mile tax fails to take into account, with the result that the light truck is penalized for the benefit of the large truck.

4. A ton-mile tax, based on truck capacity or gross weights, does not equitably distribute the cost of facilities or wear and damage to the pavement, because in these matters it is the "axle load" that is the determining factor. It is recognized that the damage to the highway alone by heavy trucks is somewhat proportioned to the speed at which they travel. A rapidly moving heavy truck may do considerable damage which it would not do at slow speed, a fact entirely ignored by the ton-mile tax.

5. Thomas H. MacDonald, Chief of the Federal Bureau of Roads, states:

> "Gas consumption varies inversely with size of the vehicle, as the size increases there is a corresponding decrease in the cost of the vehicle per ton of carrying capacity (a 5 ton truck does not cost 5 times more than a 1 ton truck), and a decrease in all operating costs as well. This is the reason for the larger vehicle, a fact that the ton-mile theory does not take into account, and it therefore penalizes the heavier vehicle and efficient operation."
>
> The ton-mile tax discourages the use of heavier vehicles, resulting in more vehicles on the road with an increase in road wear and increased driving hazards.

6. It must be admitted that ten trucks carrying one ton each and traveling ten miles pay more gas tax and constitute a greater highway menace, and occasion more pavement wear, than one truck carrying ten tons and traveling the same distance, yet the ton-mile tax makes no proper distinction.

7. Physical science measures energy by the footpound; that is, the energy required to lift one pound one foot, vertically, against the force of gravity. Multiplying tons carried by the distance traveled horizontally is not an acceptable measure of energy, and there is no justification in the contention that the ton-mile tax compensates for service rendered on the basis of energy expended.

8. The ton-mile tax, based on gross weight, unjustly penalizes the small truck carrying the same commodity as a large truck because the weight of the smaller truck is a greater proportion of the gross load than it is in the case of the larger truck.

9. The imposition of a ton-mile tax makes it obligatory, as a matter of economy, for trucking concerns to load their trucks as nearly as possible

to capacity on both going and return trips and the rapid truck transportation and delivery of goods, to which the public has grown accustomed, may be seriously delayed.

10. The ton-mile tax, unless based on revenue-producing ton-miles, unjustly penalizes truckers whose trucks start out loaded and return empty, and wholesalers whose trucks start out loaded and unload at successive stops on the going trip and return empty.

11. Collection of the tax is difficult, time-consuming and expensive. It must be accomplished by either self-assessment methods or by the installation of hub meters. A self-assessment form of taxation, in a highly competitive business such as the trucking industry, is particularly liable to evasion, and conscientious operators are unjustly penalized. In New Mexico, it is admitted that only one-third of the tax, legally due, is collected. A Kansas report states, "The mileage tax is self-assessed and is reputed to have its full share of the evasion associated with such a levy." It further adds, "Many of the larger operators complain they bear the brunt of the tax." Laws do not contribute to the morale of the public that offer a continuing temptation to profitably cheat.

12. Hub meters, in addition to substantial installation costs, are objectionable because of the expense, confusion and time lost in periodical reading, their liability to damage, need of repair and possibility of tampering. A sealed meter cannot distinguish between a loaded or unloaded truck or between taxable and non-taxable mileage. Results with hub meters in Oregon were so unsatisfactory that they were abandoned.

The Treasurer of the State of Georgia, in a recent address to the National Association of State Auditors, Comptrollers and Treasurers, made the statement "that any tax that requires more to collect than 3% of the money it produces should be abolished," and he further stated "that a tax that is costly to collect does little more than feed political patronage by fostering payrolls."

13. The keeping of the detailed reports required is burdensome and expensive for all truck operators, but especially so for those operating only one or two trucks. Any requirement that increases costs without a resulting benefit, is not in the interest of the public.

14. The Kansas Legislative Council's Publication #160 states, "The chief objections to the ton-mile tax are the difficulty of enforcement and the exemptions made by the Legislature. These raise a serious question as to its (the law's) feasibility or uniformity from an administration point of view."

15. Minnesota recently re-appealed a mileage tax and a Legislative Council Committee, in advocating repeal, said, "The problem of enforcement is out of proportion because of the small number of trucks registered in

the classes (i.e., the classes subjected to the mileage tax)."

16. The ton-mile tax as adopted by Georgia in 1929 was repealed in 1937; adopted by Iowa in 1925, was repealed in 1939; adopted by Utah in 1925, was repealed in 1937. Kentucky and Oklahoma revised their ton-mile tax in 1938 and 1939 so that they now apply only to buses. Kentucky ascribes the revision to the fact that it was difficult to administer and that its operation required additional personnel since many employees were necessary to check and maintain the records.

Georgia and Iowa in repealing their mileage tax, substituted a special schedule of fees for motor carriers. Kentucky and Oklahoma in revising their ton-mile tax instituted additional fees for motor vehicle carriers previously covered, and Tennessee now also has a gross receipts tax. The action of these states in repealing or revising their ton-mile tax is evidence of its impracticability.

The State of Utah reports that it enacted a ton-mile tax in 1935, but the law was not successfully operated and it was repealed in 1937, except as it applied to Diesel powered vehicles. In 1939, Utah's Supreme Court held the law to be unconstitutional, imposed on such equipment only, and since that time Utah has relied solely on registration fees for additional truck taxation. In 1951, the Utah Legislature set up a provision permitting out-of-state operators of 2 or more vehicles engaged in interstate commerce, to pay a monthly mileage fee on all mileage traveled within Utah, in lieu of a registration fee or temporary permit.

17. It is noted that there is an increasing tendency on the part of industry and other business institutions to use their own equipment for the transportation of supplies and raw materials and the delivery of their products to market. Such a continued increase will greatly increase the number of private carriers and will disturb the present balance between private, common and contract carriers and add to the difficulty of designing an equitable third structure tax, and it is a further argument for not hurrying the imposition of such a tax.

18. The experience of several states plainly indicates that Ports of Entry play an essential part in enforcing a ton-mile tax. In fact, when Oklahoma abolished its Ports of Entry, the ton-mile tax was abolished at the same time. Objections to enlarging the functions of Ports of Entry have already been noted in this report (see Motor Vehicle Taxation, Page 34). Since Ports of Entry have a number of duties, it is difficult to determine the cost of administering the ton-mile tax. Interstate operators in Kansas complain that since intrastate operators do not clear Ports of Entry they evade, as a consequence, a large proportion of the tax due. They add that available estimates indicate that interstate operators pay as much as two-thirds of the total ton-mile tax collected in Kansas. Since a large percentage of interstate haulers are non-residents, a very large proportion

of the revenue received from the ton-mile tax is paid by operators not residents of Kansas, and Kansas reports that many interstate operators complain that the schedule of fees charged for occasional trips into Kansas is too inflexible and, in some instances, discriminatory. The State of Oregon, in operating its weighing stations, now finds it necessary to employ 60 weighmasters.

19. A number of states impose a ton-mile tax only on interstate traffic and it is difficult to see the justice of such discrimination, since intrastate traffic requires equal service and pavement facilities. It is evident that a prime, but little publicized, reason for the enactment of ton-mile vehicle taxes, lies in the fact that they provide a means for the state to increase its revenue from out-state sources by charging non-residents for the use of the state's highways. There can be no serious objection to such a motive, but it has its dangers. The Kansas Committee on Roads and Highways, in 1950, reported that the problem of reciprocity with other states was rapidly becoming acute and recommended that "another agency" be established to initiate reciprocity agreements.

Advantages of the Ton-Mile Tax

While the opponents of the ton-mile tax are able to marshal a host of objections and are able to point out many of its shortcomings and the technical inequities that will result from its imposition, nevertheless, the following statements will be difficult to refute and are of merit and worthy of as careful consideration as are the objections offered:

1. A condition has developed by reason of the ever-increasing use of the highway by a rapidly developing trucking industry, and the increased cost of construction necessary to accommodate it, whereby certain classes of commercial vehicles do not pay their proper proportion of highway expense.

2. Additional revenue to support a proper State Highway Program is urgently needed.

3. While license fees and the gasoline tax are now and will probably remain the basic source of revenue for highway support, they do not in themselves alone constitute a sufficiently elastic or adaptable medium for the proper apportionment of taxes among all classes of vehicles, and the need of a third structure tax is clearly indicated.

4. No third structure tax has been, nor can one be, proposed that offers a perfect or universally accepted solution of the problem, but of all the solutions offered to date, the TON-MILE TAX is the most logical, practical and least objectional, easiest calculated and collected and the most widely accepted of all third structure taxes yet proposed.

The Kansas Legislative Council (Publication #160) states:

"The chief advantage of the ton-mile tax, as compared with other methods of raising revenue for highways, lies in the fact that it is distinctly a highway users tax, based on the most accurate measurement of highway use which has yet been devised. It, like the gasoline tax, is an apportioned tax which can be equitably imposed uniformly on resident and non-resident vehicles. The customary license fee, based on capacity or gross weight alone, does not provide a means for the accurate measurement of the use of the highways, and under reciprocal arrangements there is no way of determining just how extensively the Kansas highways are used by non-resident vehicle operators, and it can only be assumed that the amount of road use by the non-resident operators within the State of Kansas is counterbalanced by a similar road use on the part of residents of Kansas travel ing in other states."

A Kansas Committee on Roads and Highways reported, "No matter what the disadvantages of the ton-mile tax are, it does serve as a partial measure of highway use and produces a net revenue which is now approximately $2\frac{1}{2}$ million dollars, and in the absence of a substitute of equal or better merit as a measure of highway use which would produce a similar amount, the Committee is not disposed to consider a change. In the event that engineering findings, resulting from further experimentation, throw additional light on the subject, the matter can be reconsidered at that time."

Another argument for the ton-mile tax is found in a report by the Citizens' Public Expenditure Survey of New York State, on "The Highway Use (Weight-Distance) Tax in the State of Oregon."[1]

No effort has been made to develop a case for the weight-distance tax. In this connection, however, it may be permissible to quote, without prejudice from a letter written by Mr. R. H. Baldock, State Highway Engineer, to the Legislative Interim Committee on Highways under date of September 16, 1949. Mr. Baldock who, as has been noted, has been closely associated with the Oregon studies since their inception, wrote, in part, as follows:

"The requirements of the road-user group dictate the scope of the state highway system, the standards of design which are employed in its construction, and the service life or frequency in which it must be reconstructed. In other words, the amount and character of use dictate the cost. This statement constitutes a simple fundamental relationship which is frequently lost sight of in the maze of claims and counterclaims of special classes within the road-user group.

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1): pp. 10-13.

"If the cost is measured by the amount and character of use, and a tax is imposed to recover the cost, it then follows that the tax should be measured by the amount and character of use. This principle is not new in Oregon, but it has never been clearly recognized and understood. Before we attempt to develop a method of applying a tax in accordance with this principle, let us analyze the principle so that we may perhaps better understand the factors involved and the quantities with which we are working.

"It is important to bear in mind that 'use,' as a factor in this principle, is defined as a physical operation having a direct relation to the cost of providing the facilities. For other purposes 'use' might be defined variously as a privilege, or the product of occupancy and time, or any number of things, but for the purpose of distributing the cost we must consider only these features of use which govern the cost. These are (1) vehicle miles, and (2) weight. Vehicle miles govern the amount of facilities required and the standards of alignment on which they are constructed. Weight governs the strength which must be incorporated into the design of roadways and structures. Since, in actual operation, there can be no vehicle miles without weight, 'use' becomes a combination of weight and vehicle miles, which combination also determines the maintenance requirements and fixes the service life of the improvements.

"Cost is the other basic factor in this principle. For this purpose it may be defined as the total annual requirement in funds to construct, to maintain, and to reconstruct road facilities to accommodate the demands of road use. It is obvious that the initial cost, whether great or small, would be a minor consideration in the long run if it were not for the fact that the life of the improvement is definitely limited. Since roadways do depreciate through use, the initial cost becomes a measure of the replacement cost, and the service life of the improvement determines the portion of reconstruction cost or amount of depreciation which must be recovered each year to perpetuate the system.

"Now if we can relate 'use' to this annual cost of construction, depreciation, and maintenance, we should have a sound and lasting principle of taxation. Our considerations can then be fixed on refinements of the method and on administrative efficiency. It is a fundamental precept of highway engineering that roadways and structures must be designed and constructed to carry a predetermined load or weight. It is manifest that the greater the design load, the greater will be the cost of construction and reconstruction. From time to time arguments have been presented to the effect that minimum standards of construction for highways and bridges are established by other factors, such as the elements and that weight should not be

[illegible] the cost is measured by the amount and [illegible] of use, [illegible] imposed to recover the cost, [illegible] is measured by the amount [illegible]. [illegible] is not new in Oregon, [illegible] understood. Before we attempt to [illegible] a tax in accordance with this principle, [illegible] principle so that we may perhaps better understand the [illegible] and the quantities with which we are dealing.

"It is important to bear in mind that 'use,' as a factor in this [illegible], is defined as a physical operation [illegible] the cost of providing the facilities. [illegible] might be defined variously as a privilege, or the product of [illegible] and time, or any number of things, but for the purposes of distributing the cost we must consider only those features of use which [illegible] the cost. These are (1) vehicle miles, and (2) weight. Vehicle miles govern the amount of facilities required and [illegible] elements on which they are constructed. Weight governs the strength which must be incorporated into the design of highways [illegible]. In actual operation, there can be no vehicle miles without weight; 'use' requires a combination of weight and vehicle miles, [illegible] also determines the maintenance requirements and [illegible] the service life of the improvements.

"What is the other basic factor in this [illegible]? For this purpose it may be defined as the total annual [illegible] to construct, to maintain, and to [illegible] road facilities to [illegible] the demands of road use. [illegible] would be a simple [illegible] if it were not for the fact that the life of the improvement is [illegible] limited. Since [illegible] cost becomes a measure of the [illegible] the improvement determines the portion of [illegible] of depreciation which must be [illegible] each year [illegible] system.

"Now if we can relate 'use' to that annual cost of construction, depreciation, and maintenance, we should have a [illegible] principle of taxation. Our [illegible] can then be [illegible] method and on administrative [illegible] of highway engineering [illegible] [illegible] a [illegible] [illegible] [illegible] [illegible] road [illegible] [illegible] proposed [illegible] [illegible] contribution for highways [illegible] such as the [illegible]

a factor. The fallacy of such thinking is obvious.

"From the foregoing it is inevitably concluded that the cost per mile increases with the weight, and that the product of weight and mileage equal the total cost. It logically follows that a weight-mile tax is the only equitable means of distributing the cost among the users, and that the rate per weight mile should be graduated upward as the weight per mile is increased.

"Beginning with the lightest weight class, or automobile user, we find a satisfactory method of applying a weight-mile tax already in successful operation. Elements of this class are of approximately the same weight, generally operate as single units, burn the same kind of fuel, and there is little variation in the amount of fuel consumed per weight mile. The present gasoline tax, as applied to this class, is equitable and successful--not because it is a fuel tax, but because the consumption of gasoline by individuals in this class provides a reasonably accurate method of measuring their use of the highways, and, therefore, a suitable means of measuring and collecting their proportionate share of the cost.

"In the motor transport group the situation is entirely different; they are of different weights, they frequently operate as combinations or trains of vehicles, they use different kinds of fuel, and there is a radical difference in the amount of fuel consumed per weight mile. Therefore, it is clear that consumption of fuel in nowise measures the use of all elements and weight classes within this group. To equitably distribute the cost burden among members of this group by means of a fuel tax it would be necessary to set up a different rate for each of all possible combinations of vehicles within each weight class--an unworkable method.

"A system of flat fees to recover part or all of the tax obligations of this group is currently in effect throughout the United States. It has much to recommend it in the way of simplicity, but little to defend it as a basis of equity. It may be adjusted to return the proper proportion of cost for each weight class, but it imposes a penalty upon every individual within that class who uses the roads less than the average number of miles for that class, and constitutes a gift to every individual in the same class who uses the roads more than the average number of miles. Regardless of any supporting arguments for such an arrangement, it can hardly be called equitable.

"If our objective is simplicity of administration, there is no need to look further, but if our objective is equitable distribution of the cost, we are irrevocably committed to the weight-mile use tax.

[illegible] the weight, and that the product of weight [illegible] equal the total cost. It logically follows that a weight-[illegible] is the only equitable means of distributing the cost among [illegible], and that the rate per weight-mile should be proportion-[illegible] as the weight per mile is increased.

[illegible] the lightest weight class, or automobiles, we [illegible] any method of applying a weight-mile rate directly in [illegible] operation. Elements of data since one of recording [illegible] weights, generally operate as single units, leaving one same rate of [illegible] but there is little variation in the amount of [illegible] [illegible]. The present gasoline tax, as applied to [illegible], is [illegible] and recommend--not because it is a fact that [illegible] [illegible] of gasoline by [illegible] in this class provides [illegible] accurate method of measuring the use of the highways, but [illegible] a suitable means of measuring and co-learing that proportion [illegible] of the cost.

[illegible] the motor transport group the situation is entirely different. [illegible] in sufficient weights, they [illegible] operate as [illegible] [illegible] of vehicles, they use different kinds of fuel, and there is [illegible] differences in the amount of fuel consumed per weight [illegible] [illegible] is clear that consumption of fuel in [illegible] [illegible] of all elements and weight classes within this group. It would [illegible] [illegible] the cost burden among members of this group by [illegible] [illegible] it would be necessary to set up a different rate for [illegible] of all possible combinations of vehicles within each [illegible].

[illegible] question of what fees to recover must or all of the tax obli-[illegible] of this group is currently in effect throughout the [illegible] system. It has been to recommend it to the way of simplicity, but [illegible] to defend it as a basis of equity. It may be adjusted [illegible] the proper proportion of cost for each weight class, but it [illegible] equally upon every individual within that class who uses the [illegible] the average number of miles for that class, and [illegible] equally to every individual in the same class who uses [illegible] than the average number of miles. Exceptions of any [illegible] made for such an arrangement, it can merely be [illegible].

[illegible] our objective is simplicity of administration, there is no [illegible] further, but if our objective is equitable distribution [illegible], we are irrevocably committed to the weight-mile use tax.

I do not believe that the administrative problems identified with application of the weight-mile tax are unsurmountable. It is unlikely that a perfect motor transport law will ever be enacted--that would be one which would administer itself automatically, provide all the funds needed, distribute the cost equitably, and collect the tax without inconvenience to the taxpayer. Compromises will have to be made, and experience will enable us to improve on details of administration, but I believe we should adhere to the principle of equity, which is represented by the weight-mile tax."

CHAPTER IV

TOLL ROADS

Background

The toll road or tollgate was a common feature in medieval society. Since, generally speaking, governments did not provide adequate highways, it was frequently necessary for travelers to cross private property. The lord of each domain could, and often did, levy a charge, especially upon merchants or those transporting goods across his property. This was sometimes regarded as compensation for damage done to his property, or for the use of improvements made by the owner, but was often little more than tribute exacted for the privilege of passing. The modern practice of imposing tariffs or customs at international boundaries is sometimes said to be descended from the tolls or tributes levied by the early feudal lords.

In early America, the toll road or tollgate, as well as the toll bridge, was widely used. Sometimes the facility was constructed by private capital and the toll was expected not only to pay for construction and maintenance, but also to provide a profit to the operator. In other cases, it was provided by some public authority, and was not intended to produce a profit, but was financed by toll collections rather than from general governmental revenues.

During the Nineteenth Century, the development of the steamboat and the railroad gave tremendous impetus to travel and the transportation of goods, and created a greater demand for roads connecting with main points of rail and water transportation, as well as local roads giving access to towns and trading centers. State and local governments became increasingly active in providing these facilities with the result that the toll road and tollgate disappeared almost entirely. The toll bridge across large streams, particularly where these streams constitute state boundaries, remained, but the tendency has been to convert these toll bridges into free bridges as rapidly as possible.

The development of the automobile in the early years of the Twentieth Century gave rise to new and greater demands for more and better roads. These demands were of two kinds: (1) For a system or network of roads connecting all sections of the country; and (2) For hard-surfaced roads on the main arteries of travel which would permit motor vehicles to travel with comparative safety at relatively high rates of speed during all seasons of the year.

Traditionally, road building and maintenance have been a function of the county and township, with the cities and towns responsible for streets and highways within their corporate limits. With the development of the

automobile, the state governments began constructing some roads and assisting its governmental subdivisions in the construction and maintenance of others. In 1916, the national government entered the field by providing a system of federal aid for highway construction. Because of the intervention of World War I, however, the federal highway program did not get under way on a large scale until 1920.

Prior to World War I, the pattern for highway construction and maintenance remained much the same. Counties and municipalities continued to be responsible for local roads, financed at first primarily by local property taxes, but in increasing measure aided by allocations from the state treasury. The state, on the other hand, became responsible for construction and maintenance of all interstate roads, together with a large number of intrastate roads connecting main points within the state. In the early years of this period, funds for this purpose were derived partly from the state property tax or other general revenues, but increasingly the burden was placed upon the motor vehicle user in the form of gasoline taxes and motor vehicle registration fees, supplemented by federal aid. The federal government, while furnishing a part of the money and making certain requirements for roads constructed in part with federal funds, assumed no responsibility for direct construction, maintenance, or supervision.

Throughout most of the period between the two world wars, the financial and administrative practices described above appeared to be adequate, and a very impressive record of construction and improvement was made. The growth of population and industry, and in particular of motor vehicle transportation both in volume and in weight, however, created some unforeseen problems. In particular, it created serious traffic congestion in some areas and caused a demand for the construction of super-highways at a cost beyond the ability or the willingness of governments to finance from existing sources of revenue.

Recent Growth[1]

It may be said that the recent trend toward a return to toll roads grew out of the situation described above. Perhaps the movement can be identified officially with the passage of the Pennsylvania Turnpike Act in 1937, but the tremendous increase in the volume and weight of traffic since World War II has accelerated the toll road movement.

In 1950, there were 18 states having some kind of toll road legislation in effect, and approximately a dozen other states, including Nebraska, had considered or were considering toll road legislation. At that time, it was reported that there were 424 miles of toll roads in actual operation in 5 states as follows:

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1): Summarized from Wilfred Owen and Charles L. Dearing, Toll Roads and the Problem of Highway Modernization, The Brookings Institution, 1951

governmental subdivisions in the construction and maintenance of highways. In 1916, the national government entered the field by providing for federal aid for highway construction. Because of the [illegible] World War I, however, the federal highway program did not get on a large scale until 1920.

[illegible] for local roads, financed or done exclusively by local [illegible] taxes, but in increasing measure aided by allotments from the [illegible]. The states, on the other hand, become responsible for construction and maintenance of all interstate roads, together with a large [illegible] mileage of roads connecting main towns within the states. In [illegible] years of this period, funds for this purpose were derived mostly [illegible] the states property tax or other general revenues, but increasingly [illegible] was placed on the motor vehicle user in the form of gasoline and motor vehicle registration fees, supplemented in the federal [illegible] government, while functioning a good of the money and [illegible] requirements for roads constructed in part with federal funds, [illegible] responsibility for street construction, maintenance, [illegible]

[illegible] most of the roadbed between the two world wars. The [illegible] administrative provisions described above proposes to be adequate [illegible] in respect roads of construction, are [illegible] [illegible] and [illegible] and in maintenance. [illegible]

Recent Trends

It may be said that the recent years have tended to [illegible] [illegible] of the administration [illegible]. Perhaps the movement [illegible] [illegible] officially with the passage of the Pennsylvania "[illegible]" [illegible] the [illegible] interest in the voters [illegible] of [illegible]

There were 18 motor bridge [illegible] [illegible] and [illegible] a dozen other states, including [illegible] [illegible] or more constituting bill [illegible] legislation. At best there [illegible] there were 42[illegible] miles of toll roads, in several [illegible] as follows:

Connecticut	66
Maine	44
New Hampshire	14
New York	40
Pennsylvania	260

In addition to the toll roads in actual operation, some 350 miles of such roads were under construction in 4 states as follows:[1]

Colorado	34
New Jersey	130
Oklahoma	119
Pennsylvania	67

In addition to the roads already in operation and those under construction, 1,198 miles of toll roads had been specifically authorized in 6 states as follows:

New York	486
Ohio	239
Pennsylvania	234
Virginia-North Carolina	54
West Virginia	185

From the foregoing summary, it appears that something like 2,000 miles of toll roads, situated in 12 states, may be in operation in the near future. Since there are some 3,300,000 miles of roads in the United States, this total seems inconsequential. Because of their location and the volume of traffic carried, however, these roads are far more significant than the mere mileage figures would suggest.

It will be noted that most of the roads now in operation are in the northeastern part of the United States where the concentrations of population and industry make the problems of motor vehicle transportation most acute. Most of the roads under construction or specifically authorized are also in this area, with Colorado and Oklahoma the only western states having undertaken such projects thus far. Even in these two states, the toll roads proposed represent, in each case, an effort to relieve the congestion between two main points of travel where traffic is heaviest.

The best known of all the toll roads in the United States is the Pennsylvania Turnpike, and it is the only one which was put into operation before World War II. Its first section, extending from Pittsburgh to Harrisburg, a distance of 160 miles, was completed in 1940. Its second section from Harrisburg to Philadelphia, a distance of 100 miles, was

1): The figures given here do not agree entirely with those contained in reports from the individual states. Most of this construction has since been completed.

completed in 1950. Its third section, or western extension of 67 miles, extending from Pittsburgh to the Ohio boundary, is now under construction. When completed the road will be 327 miles in length, traversing the state from east to west and connecting its two largest cities and the state capital. Two north-south extensions totaling 234 miles have also been authorized. One of these will connect with the City of Erie, and the other with the City of Scranton, giving the state a total of 561 miles of superhighways carrying an immense volume of traffic, and financed by toll charges.

The other four states having toll roads now in operation have a relatively small total mileage. In each case, however, these roads are in the vicinity of very large cities or lie along heavily traveled routes, and were intended to relieve serious bottlenecks. In New York, where the existing toll road is only 40 miles in length, it will be noted that 486 additional miles have been authorized, so that the state expects in the near future to have its principal cities thus connected.

Characteristics of Toll Roads

Any road could theoretically be made into a toll road and any existing toll road could theoretically be converted into a free road. In general, however, it may be said that the toll road has certain distinct characteristics as follows:

1. It is usually constructed, maintained and administered by an independent public authority created by state law called the "Turnpike Commission," "Turnpike Authority," or "Toll Road Authority." In Colorado, however, the toll road is under the State Highway Department as are other state roads, and in most other states the head of the highway department is a member of the turnpike commission or authority.

2. The toll road is usually financed entirely by revenue bonds. That is to say, the bonds are guaranteed solely by the tolls collected and the revenues derived from concessions on the road, with no obligation to the state government. In a few instances, however, the state has either supplemented the toll revenues by pledging a portion of its regular highway receipts or has guaranteed the bonds in order to secure a lower rate of interest.

3. The toll road is usually a multi-lane, limited access highway. It may have either 4 or 6 lanes, separated by a raised medial strip which prevents traffic from crossing from one side to the other. Vehicles may enter or leave the road only at certain designated places (from 8 to 29 miles apart on the Pennsylvania Turnpike). Tollgates and special facilities are provided at each point of entrance and exit.

4. Because of the weight and volume of traffic which it is designed to carry and the necessity of offering superior service so that motorists

will be willing to pay the toll charge instead of using parallel, free roads, the toll road is usually built to much higher specifications as to thickness of concrete surface, elimination of sharp curves and steep grades, over-all width, etc. For this and other reasons noted, the cost per mile of constructing toll roads is usually several times as great as the cost of any roads now used in Nebraska.

Arguments Pro and Con

The toll road is now the subject of a great deal of controversy. The federal government does not permit federal aid funds to be used in the construction of such roads, and the principal officials of the U. S. Bureau of Public Roads have expressed opposition to toll roads, both in principle and as to their practicality, at least in most areas. Although a number of states have undertaken the construction of toll roads, it is commonly said that this was a measure of desperation and they defend it only on the basis of necessity. Many other states have thus far refused to approve the construction of toll roads, and the majority of the traffic authorities writing upon this subject either oppose such roads or at best give limited approval.

There are two principal arguments in favor of toll roads. They may be summarized as follows:

1. There are certain areas where traffic congestion is so great that a multi-lane, limited access highway is absolutely essential to the economy of the region and to a reduction of the appalling accident rate. The cost of these super-highways is so great that the states and localities simply cannot, from existing revenue sources, provide the necessary funds. The issuance of revenue bonds, secured by toll collections, does provide immediately the means of financing the needed facilities. Otherwise, these facilities could not be provided for many years, and perhaps never at all.

2. Financing a road by toll charges places the burden squarely and directly upon the users, and even though it may cost as much or more than if it had been built with public funds, the motorist is apparently more willing to pay directly for a service which he uses than he is to sanction even a nominal increase in the gasoline tax or motor vehicle registration fees without knowing exactly where the money is to be used. This argument is particularly appealing to persons who feel that much of the use of their main highways is by tourists or by commercial vehicles from other states, which contribute little to their highway revenues. For example, nearly half of all the tolls paid on the Pennsylvania Turnpike is paid by out-of-state vehicles, and the great bulk of the travel on the Maine Turnpike occurs during the summer months when vacationists from other states visit summer resorts in Maine.

The objections to the toll road may not be any more persuasive than

the arguments advanced in its favor, but they are more numerous and more varied. The principal ones are as follows:

1. Some opponents object on principle. They assert that the construction and maintenance of highways is a public function; that toll roads constitute barriers to travel and commerce; that they are undemocratic; and that they represent a step backward in highway development.

2. The cost of construction is alleged to be excessive. Any highway, which is designed to handle traffic of great density is very expensive, but toll roads usually cost appreciably more than free roads. The reasons for this will be explained later.

3. The cost of administration. In addition to the regular cost of maintenance and supervision, it is necessary to maintain toll stations at frequent intervals with 24-hour service, and the cost of collection sometimes exceeds 10% of the total revenues.

4. The toll road, at best, is limited to such a small proportion of the highway mileage in any state, that it offers no solution to the general road problem. It may relieve a few bottlenecks, but since it usually ends at the outskirts of a large city, it may complicate rather than relieve the traffic problem within such city.

5. The user of a toll road must pay the regular gasoline tax and motor vehicle registration for the support of highways in general, and the charge which he pays for using the toll road is usually the equivalent of an additional gasoline tax of 15 to 20 cents per gallon. For the motorist who is so situated that a great deal of his driving must be over a toll road, this results in an unfair burden as compared with the motorist who does most of his driving over roads built and maintained at public expense.

6. Entrances and exits requiring expensive construction and day and night attendants are only provided where they will pay returns. The toll road, therefore, is of little advantage or may even be a handicap to short-haul traffic, since the points at which traffic may enter the toll road are frequently 10 to 20 miles apart. The motorist living near the highway, and wishing to use it for a short distance only, may have to drive several miles on side roads before entering the toll road, or after leaving the road, in order to reach his destination.

7. If the toll road is designed to carry all traffic between certain points, it militates against the development of an integrated, publicly controlled highway system. If it is not designed to carry all such traffic, the state must maintain some alternative, parallel road with resulting duplication of facilities.

8. If the toll road is financed by revenue bonds, and is constructed and administered by a separate commission or authority, as is usually the case, this tends to develop a duplication of highway financing programs and administrative facilities.

9. Toll roads in order to attract traffic must offer advantages which necessitates expensive construction and when they parallel free roads, such free roads could perhaps be improved to offer similar advantages at substantially lower costs.

10. In order to sell bonds for a toll road, the buyer must be reasonably assured that competition from free roads will not exist. The Ohio Farmers Bureau makes this statement: "If a toll road is to remain solvent, then parallel free roads must be held to lower standards as to safety and congestion, which brings us to the conclusion that in order to provide safety and convenience for the minority who make long trips and have the money to pay tolls, we must reduce the standards of convenience and safety for those who make short trips and have lower incomes."

To all of these arguments, the proponents of the toll road have ready answers: That there is nothing undemocratic about making the motorist pay directly for the road which he uses; that the cost of construction is not out of proportion to the service rendered or the convenience provided; that the cost of financing and administering the toll road can be justified by its necessity; that the toll road is not intended to solve the entire highway problem but is designed primarily to relieve bottlenecks where traffic congestion is greatest; that duplication of facilities and of financial and administrative arrangements does not necessarily follow, since these could be integrated with the regular highway program; and that by relieving the highway department of the responsibility of constructing and maintaining the most expensive segments of the state's road system, it should be able to develop a more effective road plan for the remainder of the state.

Cost of Toll Roads[1]

Generally speaking, it costs more to finance, construct, and administer toll roads than it does for roads constructed and maintained as regular parts of the state highway system.

All modern toll roads have thus far been constructed through the issuance of bonds, and the payment of interest over a long period of years adds appreciably to the cost of the road as compared with the "pay-as-you-go" policy of Nebraska and many other states. Furthermore, these roads are normally financed by revenue bonds and the rate of interest is generally higher for such bonds than it would be if the state borrowed the money directly. For example, the first Pennsylvania Turnpike bonds bore 3.75% interest and still had to be sold at a discount, whereas the state could

1): Summarized from Wilfred Owen and Charles L. Dearing, Toll Roads and the Problem of Highway Modernization, The Brookings Institution, 1951.

have borrowed money directly at a much lower rate of interest. The New Jersey Turnpike bonds bear interest at 3.75% whereas general obligation bonds of the state bear only 2.125%. It should be pointed out, however, that some states have effected a saving in interest by guaranteeing these bonds and that the Pennsylvania Turnpike, after demonstrating its financial success, has been able to refinance at a lower rate.

The cost of administering the toll road will depend upon the volume and nature of traffic and the frequency of toll stations. In 1949, the cost of collecting tolls on the Pennsylvania Turnpike was $224,387, or 3.5% of the total revenue. Before the war, however, when the volume of traffic was much less, the cost of collecting tolls ran as high as 10%. In Maine, in 1949, the cost of collecting tolls amounted to 12% of the gross revenue. In general, it may be said that the smaller the volume of traffic, the greater the percentage cost of collecting tolls. In defense of the Pennsylvania Turnpike, it is pointed out that the commission collects more from leasing concessions for gas stations, restaurants, etc., than the total cost of collecting tolls.

The cost of constructing any road, whether toll or free, will depend upon the amount of property to be taken for right-of-way and other facilities, the materials used in surfacing, the width and thickness of the surface, the amount of tunneling, excavation, and dirt moving, the number of bridges and drainage structures, the standards of construction with respect to curves and grades, and the number of special safety features such as overpasses, underpasses, entryways, etc.

The Pennsylvania Turnpike was built in three sections, each section representing a different price level. The first 160 miles from Pittsburgh to Harrisburg cost slightly over $70,000,000 at pre-war construction prices, and the cost would have been much greater but for the fact that the right-of-way, upon which much of the tunneling and excavation had already been done in connection with an abandoned railroad property, was acquired at relatively small cost. The second section of 100 miles, authorized in 1946 and completed in 1950, cost $87,000,000. The western extension of 67 miles is now being constructed at an estimated cost of $77,000,000.

The New Jersey Turnpike, now under construction,[1] traverses an area that is said to have the greatest traffic density found in the United States, and this is reflected in the cost. Bonds were issued in the amount of $220,000,000 for the construction of 130 miles, which suggests an over-all cost of nearly $1,700,000 per mile.

In Massachusetts, a proposed toll road of 94 miles was surveyed and it was estimated that the cost would be $60,000,000. The project was abandoned because it was believed that the tolls would not be sufficient

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1): Has been completed since this report was written.

to pay the interest and principal on the bonds.

As the weight and volume of traffic diminishes, so does the cost of construction. The first 44 miles opened in Maine cost approximately $20,000,000. The estimated cost of the 34-mile stretch in Colorado was $15,000,000, and that for the 119-mile segment in Oklahoma, about $40,000,000.[1]

As suggested above, any road adequate to the traffic demands in the areas where toll roads have been built, would be very expensive. In general, however, toll roads are constructed at a higher cost than corresponding free roads. The reasons for this are as follows:

1. Free roads ordinarily use, to a considerable extent, rights-of-way which are already publicly owned, but toll roads usually require the acquisition of entirely new rights-of-way, since they are laid out to avoid cities, and since existing roads upon which federal aid money has been expended cannot be utilized without reimbursing the federal government.

2. The acquisition of new rights-of-way for toll roads is usually very expensive. Because they are generally built as multi-lane highways, with raised medial strips, the right-of-way must be considerably wider than is required for most roads. Furthermore, additional facilities for turnouts, controlled entrances and exits, gasoline stations, and restaurants must be acquired, and property values in the vicinity of toll roads are often very great.

3. Because of the weight and volume of traffic to be carried and the number of lanes which are required, construction costs are inevitably high. Furthermore, in order to appeal to motorists, most of the sharp curves and steep grades must be eliminated, which adds greatly to the cost.

4. In order to administer the collection of tolls, it is necessary to limit the entrances and exits to certain designated points. This requires the construction of elaborate connections of the cloverleaf variety at frequent intervals. It means, furthermore, that a toll road cannot intersect an ordinary road in the usual manner, since vehicles could turn off the ordinary road onto the toll road, or vice versa, without the payment of tolls. Thus where it is necessary to cross such roads, expensive overpasses or underpasses must be constructed.

Financial Prospects

The modern toll road is not intended to produce a profit. It is considered to be a financial success if the tolls collected, together with the

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1): These figures do not agree with the ones reported directly from Colorado and Oklahoma. The Colorado road was completed in January, 1952, at a reported cost of $357,000 a mile. It involved only 18 miles of new construction.

revenues derived from the leasing of concessions, provide enough money to cover administration and maintenance and pay the interest and principal on the bonds issued to finance the road. Its financial success will, therefore, depend upon a number of factors. This may be illustrated as follows:

1. A road constructed before the war, when costs were at less than one-half the present level, may be economically sound now because of the post-war increase in traffic and the consequent increase in revenues, just as any other property bought at pre-war prices would now be a good investment even though the price paid seemed too high at the time.

2. A given investment in a toll road may be sound if the money can be borrowed at 2% or 2½% interest, whereas the same investment would be unsound if the money must be borrowed at 3½% or 4%.

3. A road representing a given cost for bond financing and construction may pay out if it is used by 10,000 vehicles per day, or if a large proportion of the vehicles which use it are trucks which pay a heavier toll charge, whereas the same road would not pay out if used by only 5,000 vehicles per day, or if used primarily by passenger vehicles.

4. The road may be self-supporting if the traffic need will justify a toll charge of 1¢ per mile for passenger vehicles and proportionately higher rates for trucks, but may not be successful if the toll charges have to be reduced in order to compete with free roads.

At the time the first section of the Pennsylvania Turnpike was constructed, its economic soundness appeared somewhat doubtful. Despite the fact that the Works Progress Administration made an outright grant of $29,250,000 or nearly 45% of the total construction costs, the Turnpike Commission had great difficulty in selling revenue bonds for the remainder of the cost. It now appears, however, that this road is on a sound economic basis and the Commission expects to retire its bonds ($211,500,000 now outstanding) by 1965. The toll charge is approximately 1¢ per mile for passenger vehicles , and for trucks from 1¢ per mile for the lightest trucks, to about 6¢ per mile for the heaviest truck-trailer combinations. During 1950, traffic reached an average of 12,000 vehicles per day, with total revenues of more than $9,000,000, despite the fact that the 100-mile eastern extension was open during only the last 42 days of the year. More than half of this revenue is derived from trucks. The Commission expects that when all of its extensions have been completed, traffic will reach a total of 18,000 to 20,000 vehicles per day, with an annual revenue of something like $17,500,000. The financial success of this venture can be explained as follows:

1. Pennsylvania has only slightly more than 60% of the area of Nebraska, but has a population almost eight times as great, and is not only highly industrialized, but is surrounded by highly industrialized

[illegible] ing of concessions, provide enough money to [illegible] and pay the interest and principal on [illegible] the road. The [illegible] [illegible] operators. This may be illustrated as follows:

[illegible] road constructed before the war, when costs were at less than [illegible] present level, may be economically sound for because of the [illegible] in traffic and the consequent increases in revenue. [illegible] property bought at pre-war prices would not be a good investment [illegible] through the price paid was too high at the time.

[illegible] investment in a toll road may be sound if the money [illegible] at 4% or 5% interest, whereas the same investment would be [illegible] if the money must be borrowed at 7% or 8%.

A road representing a given cost for road improvement and [illegible] may pay out if it is used by 10,000 vehicles per day, or 3.6 [illegible] of the vehicles which use it are [illegible] a toll, but [illegible] the same toll road would not pay out if used by only 5,000 vehicles, [illegible] it used primarily by passenger vehicles.

The road may be self-supporting if the traffic used will justify a [illegible] of 1¢ per mile for passenger vehicles and proportionately [illegible] trucks, but may not be successful if the toll charges have to be [illegible] to compete with free roads.

[illegible] the Lincoln section of the Pennsylvania Turnpike was [illegible] economic so-called [illegible] downtrend. During the [illegible] years Pennsylvania Administration made a straight trend of [illegible] 10,000, or nearly 10% of the total construction cost. The Pennsylvania [illegible] for the 11 months ending November 1949 the traffic [illegible] [illegible] 1948. It was suggested, however, that this road [illegible] [illegible] the transportation experts to realize its [illegible] (1949, 1950, 1951) for 1955. The toll charge is [illegible] [illegible] vehicles, and for trucks from [illegible] or [illegible] [illegible] traffic reached an average of 18,000 vehicles per day, the total [illegible] of more than 6,000,000, despite the fact that the [illegible] was open during only the last 9½ of the year. [illegible] [illegible] is derived from trucks. The Commission expects that [illegible] of the extensions have been completed, traffic will reach a [illegible] of 20,000 vehicles per day, with an annual revenue of approximately [illegible]. The financial success of this project can be explained [illegible]

[illegible] but only slightly more than 66% of the cost of the road or [illegible] equivalent almost eight times as great, and is not [illegible] situated, but is surrounded by highly industrialized

areas. Its roads must, therefore, carry an immense volume of traffic, with a large proportion of heavy trucks.

2. Because of the mountainous terrain in Pennsylvania, many of the roads of ordinary construction contain numerous steep grades and sharp curves which slow up traffic, increase the hazards of driving, and add greatly to the cost of motor vehicle operation. Drivers are, therefore, glad to pay the toll charges in order to avoid the unsatisfactory competing free roads. It is reported that the savings in time, gasoline, and wear and tear on trucks, for example, more than offset the toll charges.

3. The first section of the Pennsylvania Turnpike was constructed when costs were comparatively low, and was constructed in part with federal funds, for which no repayment is required. The second section was constructed when costs were below the present level. If the entire turnpike were constructed at present-day costs, the project might have much greater difficulty in paying out.

The New Jersey Turnpike will represent the greatest cost per mile of any toll road now projected. Until it has been in operation for some time, its financial soundness can only be conjectured. It traverses an area of tremendous traffic density, however, and according to reports, the traffic surveys indicate the probability that the venture will be economically sound.

In 1938-1939, the Bureau of Public Roads studied the feasibility of constructing 6 transcontinental toll roads--3 running east and west and 3 running north and south--totaling some 14,336 miles in length, at an estimated cost of $2,900,000,000, with a proposed toll charge of 1¢ per mile for passenger cars and an average of 3½¢ per mile for trucks and buses. At that time, it was found that the toll collections from this road system would be wholly inadequate to pay the cost. At the same time, however, it was found that some segments of these roads--those segments traversing areas of the greatest traffic density--would be self-sustaining. Since this survey was made, there has been considerable increase both in traffic and in cost of construction, but the basic conclusions apparently remain sound.

Colorado[1]

In 1947, the Colorado Legislature authorized the State Highway Department to construct a toll road from Denver to Boulder to be financed by the issuance of revenue bonds.

A survey of the traffic and toll potentials over the proposed toll road, made in 1948, indicated that the road would not be wholly self-liquidating, hence it was impossible to sell the bonds entirely on a revenue basis.

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1): Summarized from information supplied by Colorado Highway Department.

In 1949, the Legislature authorized the Highway Department, in addition to assuming all costs of administration, supervision and maintenance, to guarantee from regular highway funds the interest and principal on the bonds up to a maximum of 30% of the total. This did enable the state to market the bonds, and construction was begun in 1950.

The present distance from Boulder to the city limits of Denver, by the route most frequently traveled, was reported to be 28½ miles. The toll road will shorten this distance to approximately 20½ miles. Not quite all of this distance will represent new construction, since the toll road will connect with a regular 4-lane turnpike a few miles outside of Denver. The latter road has already been constructed out of regular highway funds. The exact mileage of new construction does not appear in the report.

The estimated total cost of financing and constructing the new toll road was $6,000,000, but for this purpose bonds in the amount of $6,300,000 were issued. The bonds bear interest at from 2-7/8% to 3%, mostly at the latter rate, and their maturity dates range from 1956 to 1980, or a total of 30 years for the life of the bonds.

If the bonds are retired on schedule, the total cost in interest and principal will amount to $10,767,637.50. They are to be retired by toll collections so far as possible but, as previously noted, a maximum of 30% of the total is guaranteed by regular highway funds.

The proponents of the road are hopeful that the revenues will be sufficient to liquidate the bonds, though the traffic survey made when the project was undertaken indicated total expected revenues of $9,958,000 over the 30-year period. This would leave a deficit of $809,637.50 to be made up out of regular state highway funds. If at that time the road were made toll-free, the cost paid by the public would not be excessive considering the type of road constructed. The state, as previously noted, expects to bear all the cost of administration, supervision, and maintenance.[1]

Oklahoma[2]

In 1947, the Oklahoma Legislature established the Oklahoma Turnpike Authority and authorized it to construct a toll turnpike which would connect the two metropolitan cities of the state--Oklahoma City and Tulsa. The population of these two metropolitan areas is reported as 325,000 and 245,000, respectively. The highway between these two cities carries the greatest volume of traffic of any road in the state.

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1): This road was opened in January, 1952, and reports indicate that traffic and revenue are greater than had been anticipated.

2): Summarized from information supplied by Oklahoma Turnpike Authority.

The proposed turnpike is to be constructed, administered, and maintained directly by the Turnpike Authority, which has no direct, or legal relationship with the State Highway Department. It is to be governed by a commission of 5 members, including the governor as an ex officio member, and one member from each of the 4 counties traversed by the road. The 4 additional members are appointed by the governor with the advice and consent of the senate.

The present distance between Oklahoma City and Tulsa is approximately 115 miles, but the turnpike will follow a more direct route, thus shortening the distance by 13½ miles. Furthermore, it will utilize some 13 miles of 4-lane highway already in existence. The turnpike proper will, therefore, represent 88 miles in new construction. Actual work on this road was begun in 1950, and is expected to be completed by the end of 1952.

The estimated over-all cost of the project is $31,000,000. It was financed by a $31,000,000 bond issue which was sold to private investors. The bonds run for a total of 40 years, maturing from 1958 to 1990, and bear interest at the rate of 3.43%. The bonds are guaranteed solely by the revenues from tolls and concessions, and the State of Oklahoma assumes no obligation for them.

In addition to the entrance and exit at each end of the turnpike, there will be 4 intermediate entrances and exits with tollgates. The turnpike survey upon which the road is based, estimated that the road would, when completed, carry an initial volume of 3,004 vehicles per day, divided as follows: 2,463 passenger cars, 514 trucks, and 27 buses. This is expected to increase gradually, almost doubling during the 40-year life of the bonds.

The toll rates for the use of this road have not been fixed as yet and, therefore, no valid estimate of toll revenues is now available. The general manager of the Turnpike Authority reports, however, that the tolls will be fixed at the point necessary to provide enough money to pay off the bonds and bear the expense of administration and maintenance.

In light of recent experience and of surveys made in other states, it would appear that if the volume of traffic does not exceed that indicated by the survey, the toll rates will have to be fairly high, in order to liquidate the bonds and maintain the road.

Some authorities argue that a toll road may be justified on economic grounds even though the tolls are not sufficient to bear the entire burden of financing. They point out that a necessary highway facility is thus provided, and that it would have to be provided at public expense if there were no toll road. Thus it is said that if a part of the burden is borne by toll collections, the remaining burden is less than the state would otherwise have to bear.

Conclusions

There is a great deal of controversy as to whether any state should, as a matter of policy, sanction the construction of toll roads on any part of its highway system. There is fairly general agreement, however, that the toll road, if used at all, has only limited possibilities.

The Deputy Commissioner of the United States Public Roads Administration recently stated that, of the 3,300,000 miles of roadways in the United States, probably not much more than 2,000 miles would be suitable for operation as toll roads.[1]

Some critics may feel that the Commissioner is prejudiced, or that his estimate is too conservative, but two writers who are rather favorable to toll roads, at least in the congested areas in which they are now in operation or under construction, assert that, "The toll road solution at best can be applied to only a limited mileage of roads. The toll road offers no solution to the problem of crowded city streets, and in rural areas it must be limited to the segments of the road system carrying a high density of traffic in order to assure self-support."[2]

These writers add that a modern toll road has a reasonable prospect of financial success if three conditions are met.[3] These conditions are:

1. The toll roads must be designed to standards which provide services appreciably superior to those offered by existing or prospective free roads.

2. Toll roads must be established only after competent and comprehensive surveys have shown the traffic potentials to be such as to justify construction and maintenance costs.

3. Political and special interest considerations must be excluded from the management of the facilities provided.

Ohio is one of the states which have authorized the construction of toll roads. The director of the Ohio Department of Highways, in defending the policy of his state, observes that "Because public finances inevitably lag behind demand, it is necessary that highway planning be projected far into the future to anticipate the needs of the years to come. We are, therefore, forced to think in terms of these broad super-highways, with their gentle curves and

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1): Opinion expressed at a recent highway conference sponsored by the American Council on Education in Washington, D. C.
2): Owen and Dearing, Op. Cit. p. 182.
3): Ibid. p. 10.

controlled grades, separated intersections and other traffic and safety features, wherever the incidence of traffic is great. The toll turnpike is a means by which such highways can be provided almost overnight."[1] He admits, however, that toll roads should be constructed only in areas of great traffic density where there is an urgent need for improved facilities and where public funds for such construction are lacking. He adds that his state would prefer to build these super-roads out of public funds, but that it finds itself unable to do so.[2]

The State Highway Commissioner in Michigan argues strongly against toll roads as a matter of state policy, asserting that "If there is enough traffic to warrant a bond issue for a toll road, there is need for a free road, and citizens in any state should, in my opinion, be willing to pay sufficient highway taxes for its construction as a part of the state's free highway system."[3]

The authority just cited, while arguing against toll roads in general, admits some possible justification for them. In this connection, he says, "I recognize that toll roads could be a logical solution to certain highway needs in some sections of the country, either because of mountainous terrain separating two large cities quite a distance apart, or to provide access to a congested city like New York, especially if state highway revenues were inadequate."[4]

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1): T. J. Kauer, "The Case for the Toll Turnpike," State Government, April, 1951, p. 74.
2): Ibid.
3): Charles M. Ziegler, "Free Roads the Only Sound Solution," State Government, April, 1951, p. 75.
4): Ibid.

CHAPTER V

THE NEBRASKA DEPARTMENT OF ROADS AND IRRIGATION

The difficulties of operating a department of government in the same way a successful business institution would be operated, arise chiefly from the differences in their objectives and the purposes for which they are established. The business institution is organized for the purpose of making a profit, while governmental agencies are not interested in profits, but are established for perhaps the more noble purpose of serving the public and catering to its demands. If a business fails to make money, it goes bankrupt or there is a shake-up in its executive control, while the governmental agency has no such specters in its background to inspire its activity. The business institution has back of it the dividend-hungry stockholder, while the governmental agency is responsible only to the voters. A recent Gallup survey would indicate that the voters in general do not know how their tax money is spent and are indifferent as to the accomplishments of the tax spending agency. All too many do not vote, or when they do vote they are influenced more by the fact that the office seeker is a good fellow, or is the friend of a friend, or lives in the right community or section of the country, than they are by his capability to handle the job he seeks. No business institution would last very long if its executives were appointed for similar reasons.

Nevertheless, governmental agencies are created for the conduct of business, and should be operated along the same lines as have proved successful in operating private business. The Department of Roads and Irrigation, spending in the neighborhood of 20 million dollars a year, is a business institution, and big business at that, and it should be so regarded and conducted. Few private concerns in the state do business on a larger scale. Few require more engineering skill and judgment or involve the handling of more troublesome and varied details. Few have their activities spread over a greater area or are as dependent upon a contracting fraternity, always avid to further its own interest. Surely few are as harassed by insistent demands for services impossible of fulfillment but pressurized by powerful groups, and few require greater diplomacy, finesse and forbearance in handling a critical clientele, a large part of which is destined to be dissatisfied.

The purpose of this chapter is to review the Department's activities, to determine if it is operated in accordance with recognized business principles, and perhaps to offer some suggestions as to how its operations might be improved.

The Department's Organization

The organization requirements necessary to the successful conduct of a business institution are not complex or impossible of achievement. They

are fully applicable to the Highway Department, and can be briefly summarized as follows, and in order of their importance:

(A) The establishment of proper management and executive control.
(B) An efficient working organization, logically departmentalized with a definite alignment of authority.
(C) Efficient facilities and plant layout.
(D) Proper accounting practices.

1. Management. The success of any institution is first and largely dependent upon its management. Other things are important but they follow, as a natural sequence under proper management. Proper management is not possible unless sufficient authority to act is delegated to it. The ordinary business institution usually has a board of directors who decide all matters of policy and appoint a general manager who works under their direction and holds office subject to their consent. The chief executive of Nebraska's Highway Department is appointed by the governor with the consent of the Legislature, and properly so, since the governor is held primarily responsible for all activities of the state government. Most business concerns delegate managerial authority to one person, held responsible for the conduct of the business. Divided authority affords an opportunity for "passing-the-buck" and leads to confusion, jealousy, and working at cross purposes. Human nature is such that unless responsibility is clearly fixed, the ordinary individual will take every opportunity to avoid assuming it.

The survey of any outstanding successful business will invariably uncover one man who is primarily responsible for its success. Such a man will be a man of ability, experience, energy, and loyalty, possessed of vision and creative powers, able to handle men and meet the public. He will have few outside distracting interests and will be sold on his job. When such a man is located, he should be retained and properly compensated.

Nebraska has been fortunate in the men chosen to head its Highway Department these past several years. They have compared favorably with similar officials in other states, and the compensation now paid them by Nebraska compares favorably with that paid in comparable states. No criticism of the Department's present executive control is offered, or due.

2. The Organization. An efficient organization necessitates a proper division of responsibilities and clearly established lines of authority. As now constituted, the Highway Department delegates its responsibilities and activities to departments or divisions as follows:

1. The Division of Administration
2. The Division of Records and Control
3. The Division of Highway Planning
4. The Division of Design
5. The Division of Materials

6. The Division of Tests
7. The Division of Right-of-Way
8. The Division of Office Engineer
9. The Division of Construction
10. The Division of Maintenance
11. Districts
12. Departmental Attorney
13. Motor Vehicle Division
14. Law Enforcement and Public Safety (Safety Patrol)
15. The Bureau of Irrigation, Water Power and Drainage

Each division or department is in charge of a chief given authority for its control, and the organization chart would appear to be logical, although perhaps a bit over-refined, since it would appear from a cursory examination and in the interests of simplicity, that the Divisions of Materials and Tests could be combined as could also the Divisions of Planning, Design, and, perhaps, Office Engineer.

The functions of the Motor Vehicle Division have seemingly little in common with the other functions of the Department, since it is largely a certificate-issuing and fee-collecting agency and handles matters of an accounting rather than of an engineering nature. It might perhaps be equally well placed under the jurisdiction of the Tax Commissioner, although objections to such a change can be offered.

While the Bureau of Irrigation handles many matters of an engineering nature, it is also concerned with water rights, etc., not of such nature, and there is no evidence that it would not function equally well if placed under a separate or another state department, nor is there evidence that such an arrangement would result in greater economy or saving in expense.

The functions of the Highway Patrol are, of course, rather strikingly different from those ordinarily considered as of a highway department nature. It is primarily a law-enforcing agency. Some states, including Kansas, place the control of the Highway Patrol under a separate department. The arguments advanced in favor of its continuance under the Highway Department are as follows:

1. Close coordination between the Highway Department and the Patrol are essential. The Highway Patrol reports highway breakdowns and the need of prompt repairs. It assembles data of importance to the Highway Department. Good relationship and cooperation are essential.

2. Both the Highway Department and the Patrol have need of radio service and the expense of two systems is not justified.

3. The Highway Department maintains 20 weighing stations in whose

expense the federal government participates. The ten new stations to be installed by the state will be administered by the Highway Patrol. Both types of weighing stations should be under one state department.

4. The governor should have ultimate control over all law-enforcing agencies, and the Patrol, in any case, should not be removed from his direct supervision, as might occur in a commission type of control.

If it is considered desirable to lessen the burden and multiplicity of duties now assigned to the Highway Department, it might be accomplished by removing from its jurisdiction, as has been proposed, (a) the Division of Motor Vehicles, (b) the Bureau of Irrigation, and (c) the Highway Patrol, which would leave the department concerned with only matters of highway construction and maintenance. Such a separation, however, would entail extra expense for other present departments, or the creation of still other new departments, and no evident savings in cost or increased efficiency is readily apparent. It might even result in increased personnel and expense and an undesirable loss in coordination, and it would appear that there is no great pressing necessity for such separation at this time.

It would appear that there is ample justification for the creation of a new office within the department--that of an assistant manager or business manager, to be second only in line of authority under the department's chief and to have full control during the absence or incapacity of the chief. He should have jurisdiction over the accounting division and all matters of a business nature as distinguished from those of an engineering or construction nature, which should continue directly under the chief engineer.

An efficient organization demands a satisfied personnel, and such a requirement necessitates that they be adequately compensated. A man will not be satisfied or do his best work if he knows he is fully as qualified as the man who works for a private concern, that he has equal responsibility and does as much work but receives a smaller salary. During the past, the state has spent money training men and converting them from theoretical students to practical engineers, only to lose them because they were offered greater opportunities elsewhere.

3. Plant and Facilities. The Highway Department appears to be well equipped. However, housing facilities are crowded and there is no reason why the entire department should continue to be housed in the State Capitol. Eventually, arrangements might well be considered to move all but its executive offices to the department's laboratory building, even if it requires enlarging that building. Such a move would alleviate present congestion in the Capitol, and would make possible a closer coordination between the department's operating divisions.

4. Accounting. The department's present accounting practice would appear to be efficiently administered. Financial reports are published in great detail and in form, easily understood by persons experienced in accounting practice. The ordinary citizen, however, has difficulty in interpreting them and ordinarily does not try. A financial statement in simple form, showing the total amount of money received and the sources from which it came, and balanced against the purposes for which it was spent, should each year be given widespread public distribution. Such a practice might go far in creating a better public understanding of the department's problems, prevent misstatements and unfounded accusations, and lead to a more general acceptance of its accomplishments. The rather voluminous annual report of the department to the governor hardly accomplishes this result.

The department should be fully audited each year, preferably under the direction of the State Auditor.

The Commission Form of Highway Department Control

The principal demand of those who are not now satisfied with the operation of the present State Highway Department, is that a highway commission form of administrative authority be substituted for the present system of one-man control. This demand is supported by many substantial, civic-minded persons and organizations, and merits careful consideration, analysis and attention.

In a recent tentative draft of a Highway Research Board Report four types of highway commissions were listed:

1. Single Executive with advisory commission
2. Single Executive with commission in coordinate capacity
3. Limited Control Commission (policy only)
4. Administrative Commission

Some form of the commission or highway advisory board type of control has been adopted by 31 states of the Union. In practice some states invest complete administrative authority in a board, whose members are employed on a more or less full-time basis, and salaries range from $2,400 a year in Florida to $8,500 per year in Massachusetts (the chairman of the board in Maryland is paid $10,000 a year.) The number of members varies from 3 in Maine to 9 in Louisiana.

In other states, the board acts merely in an advisory capacity, and the number of members varies from 3 in a number of states to 12 in Georgia. They are usually paid on a per diem basis, plus expense, with a fixed yearly maximum, and the compensation varies from $10 to $15 per day.

In states operating under a highway commission form of control, the state is ordinarily divided into districts and members of the commission

are generally appointed by the governor, although in Michigan they are elected by the voters of the district, and in South Carolina they are named by the legislative delegation from the district.

Following are tables, which show the type of highway department administrative control in every state of the Union, together with such other information as was considered pertinent:

(See Tables on Following Pages)

HIGHWAY ADMINISTRATION
IN
STATES HAVING A HIGHWAY COMMISSION

State	Title of Commission	Number of Members	How Appointed	Term of Office	Compensation	Administrative Officer
Arizona	Highway Commission	5	1 From Each of 5 Districts	5 Years	$15 Per Day $1,500 Maxim.	Ex. Secretary
Arkansas	Highway Commission	10	Appointed by Governor	2 Years	$10 Per Day	Director
California	Department of Public Works	6	Governor Nominates	4 Years	$15 Per Day	Director of Public Works
Colorado	Advisory Board	7	Appointed by Governor	3 Years	Actual Expense	State Highway Engineer
Delaware	Highway Commission	7	1 From Each County	4-6 Years	Actual Expense	Chairman of Commission
Florida	Highway Board	5	1 From Each Congressional District	4 Years	$2,400 Per Year	Chairman of Board
Georgia	Highway Commission	12	1 From Each Cong.Dist. 2 At Large	4 Years	$7 Per Day	Director
Indiana	Highway Commission	4	Appointed by Governor	4 Years	$7,200 Per Yr.	Chairman of Commission
Iowa	Highway Commission	5	Appointed by Governor	4 Years	$4,500 Per Yr.	Chairman of Commission
Kansas	Highway Commission	6	1 From Each Highway District	2 Years	$10.Per Day $1,500 Maxim.	Director
Louisiana	Board of Highways	9	Chairm.of House Com. on Public Roads, and 1 From Each Cong.Dist.	--	$5,000 Per Yr.	Director
Maine	Highway Commission	3	Appointed by Governor	3 Years	$3,500 Per Yr.	Chief Engineer

HIGHWAY ADMINISTRATION
IN
STATES HAVING A HIGHWAY COMMISSION (Continued)

State	Title of Commission	Number of Members	How Appointed	Term of Office	Compensation	Administrative Officer
Maryland	Highway Commission	3	Appointed by Governor From Designated Dists.	--	Chairm.$10,000 Associates $5,000	Chairman of Commission
Massachusetts	Highway Commission	3	Commissioner and 2 Associates	3 Years	Comm.$8,500 Assoc's.$6420	Commissioner
Mississippi	Highway Commission	3	1 From Each Supreme Court District	4 Years	$15 Per Day	Director
Missouri	Highway Commission	4	Appointed by Governor	4 Years	$10 Per Day	Chairman
Montana	Highway Commission	5	1 Member from Each Highway District	4 Years	$12 Per Day	Chairman
Nevada	Board of Directors	3	Governor, Atty.General and State Auditor	4 Years	--	Highway Engineer
New Mexico	Highway Commission	3	Appointed by Governor	6 Years	$10 Per Day $900 Maximum	President of Commission
North Carolina	Highway Commission	11	Chairm.From State at Large; 10 Members From Designated Dists.	4 Years	$10 Per Day	Chairman
Oklahoma	Highway Commission	8	Governor - Ex Officio 1 From Each Cong.Dist.	8 Years	$15 Per Day	Director
Oregon	Highway Commission	3	1 From Each Cong.Dist.	3 Years	Actual Travel and Other Exp.	State Engineer
South Carolina	Highway Commission	14	1 From Each Highway Dist. Elec.by Legislative Delegation	4 Years	$100 Per Yr.	Chief Highway Commissioner

HIGHWAY ADMINISTRATION
IN
STATE HAVING A HIGHWAY COMMISSION (Continued)

State	Title of Commission	Number of Members	How Appointed	Term of Office	Compensation	Administrative Officer
South Dakota	Highway Commission	4	Governor is Member Ex Officio and appoints other 3 Members	4 Years	$3,000 Per Yr.	Governor
Texas	Highway Commission	3	Appointed by Governor	6 Years	$4,560 Per Yr.	Chairman
Utah	Highway Commission	3	Appointed by Governor	6 Years	$4,500 Per Yr.	Chairman
Vermont	State Highway Board	3	Appointed by Governor	6 Years	$10 Per Day $3,000 Maxim.	Commissioner
Virginia	Highway Commission	8	Appointed by Governor	4 Years	$10 Per Day $1,000 Maxim.	Commissioner
West Virginia	Highway Commission	5	State Road Com. and 4 Governor Appointed Members	4 Years	$10 Per Day $100 Maximum	Road Commissioner
Wisconsin	Highway Commission	5	1 From Each of 5 Dists.	6 Years	$6,500 Per Yr.	Chairman
Wyoming	Highway Commission	5	1 From Each of 5 Dists.	6 Years	$600 Per Yr.	Chairman

HIGHWAY ADMINISTRATION
IN
STATES HAVING ONE MAN IN CONTROL

State	Department Title	Ranking Official	Remarks	Term of Office	Compensation
Alabama	State Highway Department	Director	Appointed by Governor	--	$ 5,700.00
Connecticut	State Highway Department	State Highway Com'r.	Appointed by Governor	4 yrs.	10,000.00
Idaho	Dept. of Public Works	Commissioner	Appointed by Governor	2 yrs.	4,000.00
Illinois	Dept. of Public Works	Director of Public Works and Buildings	Appointed by Governor	2 yrs.	8,000.00
Kentucky	Department of Highways	Commissioner of Highways	Appointed by Governor	4 yrs.	5,000.00
Michigan	State Highway Department	Commissioner	Elected by the people	4 yrs.	7,500.00
Minnesota	Department of Highways	Commissioner	Appointed by Governor	4 yrs.	8,500.00
Nebraska	Dept. of Rds. & Irrigation	State Engineer	Appointed by Governor	2 yrs.	7,500.00
New Hampshire	State Highway Department	Commissioner	Appointed by Governor	5 yrs.	7,500.00
New Jersey	State Highway Department	Commissioner	Appointed by Governor	--	15,000.00
New York	Dept. of Public Works	Supt. of Public Works	Appointed by Governor	4 yrs.	17,500.00
No. Dakota	State Highway Department	Commissioner	Appointed by Governor	3 yrs.	5,000.00
Ohio	Department of Highways	Director of Highways	Appointed by Governor	--	8,666.00
Pennsylvania	Department of Highways	Secretary of Highways	Appointed by Governor	4 yrs.	12,000.00
Rhode Island	Dept. of Public Works	Director of Pub. Works	Appointed by Governor	2 yrs.	6,000.00
Tennessee	Dept. of Highways & Pub. Wks.	Commissioner	Appointed by Governor	2 yrs.	6,600.00
Washington	Dept. of Highways	Director of Highways	Appointed by Governor	--	7,500.00

Data secured from a Publication of the Council of State Governments entitled "Highway Safety and Motor Truck Regulation."

In Illinois, the law provides for an appointed Highway Advisory Board, but none has been appointed since 1937.

In order that the Legislature may have information as to the advantages and disadvantages of the commission type of control, the following arguments in favor of its adoption, and those opposed, are presented, collected from all sources available and presented without bias or prejudice:

Arguments in Favor of a Commission

1. The business conducted by the department is on too large a scale and the interests of different sections of the state are too varied to be entrusted to the decisions of a single man.

2. A commission form of control makes it possible for every section of the state to be directly represented and to have a voice in fixing department policies and in determining where, when, and how new highways shall be constructed.

3. A commission form of control gives every citizen in every district an opportunity for direct and sympathetic contact with those in control of the department, and will persuade them that they have informed and interested representation. It is a democratic method of administration.

4. A commission form of control should make available to the department for advice and direction, men from varied walks of life, experienced in various businesses, and accurately informed as to the actual needs and conditions in every corner of the state.

5. It will establish policies, accept responsibility and give the department's operating executive needed time and opportunity to devote to the management of the department.

6. It will restore the public's confidence in the department, and should in large measure remove the feeling current in some quarters of the state that they have been discriminated against.

7. Every successful private business concern is especially careful in the matter of its accounting procedure, and the accounting department frequently reports directly to the board of directors rather than to the management. In a commission type of administration, the board can assume complete control of accounting and is enabled to receive financial information in the form it desires, thus removing the possibility of management presenting biased financial reports in such a way as to support its own views or to emphasize its requests.

8. The establishment of a highway commission will make possible the continuity of an established road program. The "what, where, and when" of such program will not be subject to change with a change in administration.

Arguments Opposed to a Commission

1. Business administration by committee has never been accepted by private enterprise as a preferred policy, and is not the way the ordinary successful American business is conducted. It may be regarded as fundamentally a socialistic concept. It is not in accordance with recognized and proven organization principles. It divides authority, prevents the definite allocation of responsibility and is conducive to trade and expensive compromise. It will set up cliques in the department and stifle initiative in its members.

2. Critics of the present Highway Department, while they make no substantiated charge of inefficiency, aver that it has lost the confidence of the public and for that reason, its form of organization should be radically changed. Simply to make a change is not a guarantee of improvement, and no evidence is offered that there will be less criticism or discontent under a highway commission. It is natural for every governmental agency to incur criticism. The only cure for such criticism is communism or a dictator, and an effective cure for discontent would be very expensive.

3. It is true that dissatisfaction has been voiced in many quarters of the state. Such complaints have arisen largely because available funds have not been sufficient to date to build or maintain all of the highways that somebody thought should receive first consideration. It has been encouraged in some degree by people with political ambition who, while they have been hardly well enough informed to be accounted as qualified critics, take advantage of an opportunity to attract public attention. Thomas H. MacDonald, Chief of the Federal Bureau of Roads, is quoted as having said, "Most of the things folks know about the Highway Department are not true." There will be continued complaint and criticism of the Highway Department until the road program is complete, no matter if it is administered by divine guidance or by a whole flock of commission members.

4. It is true that a commission form of control will be made up of members who will be accurately informed as to the needs and conditions in their home districts, and it is just as true that they will be primarily interested in the promotion of the best interests of their particular districts. The department should be governed by what is to the best interests of the state as a whole and not by what is best for any one particular district.

5. It is true that a highway commission will give the people of a district personal and interested representation. Unfortunately, however, there is never unanimity of opinion in any district as to any matter, and the result will simply be a transfer of criticism and complaint from the capital to the local community when it may be of a really loud and bitter nature. We have it on Biblical authority that a prophet is accepted and

hearkened to with respect everywhere except in his home country.

6. While it is claimed that a highway commission will function in much the same way as the board of directors of a private business, this difference must be noted: Members of a board of directors are financially interested in the earnings of the company. It is their own money they spend, and their profits, if profits are made. The members of a highway commission have no such inspiration. It is the public's money they spend, and their private fortunes should be little affected by the acts of the commission.

7. There is no reason to believe that a commission form of control will result in increased efficiency or decreased costs. On the contrary, the tendency will be towards increased costs. In Colorado, operating under a highway commission, the cost of the department's administration is 6.9% of the total amount expended, as against 5.4% in Nebraska. If the board operates on a full-time basis, it will be a detriment unless made up of competent men, and such men will necessarily require adequate compensation and separate and expensive office set-ups. If the board is of an advisory nature, intermittent and occasional meetings will distract the attention of the department from its usual routine, it will take time and expense to keep a board informed as to what is going on and what is proposed, and important emergency decisions may be held up awaiting advice from the commissio and fear of censure will prevent departmental executives from taking the initiative.

8. Results in states operating under highway commissions do not indicate that such commissions are a means of effecting greater economy, or of building more roads, or of lessening discontent or criticism, or of effecting a more ready acceptance of a highway program. Kentucky and Idaho both had highway commissions at one time, but they abolished them and now operate under the single commissioner type of control. Once established, highway commissions are difficult to abolish.

9. The members of a highway commission are ordinarily men with at least some important personal outside business interest. Their memberships place them in positions where they can exert considerable pressure as to where orders for material and supplies are placed. It is not reasonable to expect that all members will always overlook their own interests while acting as board members. Cases have been known where board members have indicated to successful contractors bidding on state work, where they would like to have the necessary bonds or insurance placed, and it is not remarkable that in most cases such expressed desires have been satisfied. Indeed, cases have been reported when such expressed desires were not satisfied, and for some reason or other the contractor has had great difficulty in satisfying inspection requirements, and even greater difficulty in receiving payment for work performed in accordance with the terms of the contract.

10. Highway commissions present excellent opportunities for a majority of the board to "gang up" on the minority and thus secure advantages for their districts at the expense of the other districts.

11. Of the two types of commissions, the type in which the commission acts only in an advisory capacity with meetings at intervals, would seem to be preferable, but in this type, the compensation is such that service on the board would ordinarily only be accepted as a matter of civic duty. Members could not be expected to spend much time in posting themselves as to actual needs and conditions, and without such information their advice would not be particularly helpful, and it is the type of organization wherein a strong and interested man could easily gain control and dominate the policy.

12. Political influence should have no consideration in the shaping of a highway program nor in the conduct of highway department affairs and the State's Highway Department, as presently organized, has always been as free from charges of political domination as it is possible for any governmental agency to be. The commission type of control is particularly vulnerable to political machination. If its members are elected by the people, their election will be dependent upon their party affiliation and popularity and not upon their fitness to handle the job, while if they are appointed by the governor, he naturally will appoint men who are friendly to his administration and political ambition and opportunity is provided to establish exactly the right foundation for a powerful state-wide political machine.

Comments and Observations

1. The activities of the Highway Department are largely of an engineering nature, and most engineering consists simply of the application of known laws and techniques to the problem at hand. Such laws and techniques are either based on accepted and proved theory or are established by experience and observation. It is a peculiar fact that the average citizen will accept without dissent the verdict of a lawyer or a doctor, but is always inclined to question or be dissatisfied with the solution of an engineering problem. Most men's actual knowledge of engineering principles is not extensive, but they are all interested in construction projects and convinced that they are possessed of considerable engineering or construction skill, which perhaps in some degree accounts for their always ready criticism of the Highway Department.

2. It is frequently complained that the department's standards of highway design are too expensive for many classes of roads. It must be remembere that in the building of a road, participating in federal aid, the specifications must comply with federal requirements and not much leeway is left for economizing in design or for taking advantage of local conditions, materials, or requirements. Furthermore, it is to be noted that state highways are maintained at state expense and apparent sayings in initial cost can be quickly dissipated by increased cost of maintenance.

In order to share in the federal aid program, it is necessary that a state agree:

1. To maintain a highway department of high standards.
2. To assume reponsibility of maintenance on all roads on which federal moneys are spent.
3. To classify roads in eligible systems.
4. To follow uniform standards of construction, design, and specification.
5. To meet inspection requirements before bills are paid.
6. That there be no diversion of road funds to non-road purposes.
7. To match federal funds with materially accepted standards.

When states do not maintain highways on which federal funds have been received, the federal government, after a 90-day notice, can perform the necessary work and charge the expense to the state.

3. It is to be regretted that highway engineering and construction has never kept pace with automotive engineering. It has always been behind rather than to the fore, which can be accounted for partly by the fact that wars have practically stopped highway construction while they immensely benefited the development of the motor vehicle, but more largely accounted for by the parsimonious consideration shown Highway Department personnel and the bungling interference of politicians and self-interested groups.

The present 18,000# axle limitation came about through action in 1932 of a committee of the American Association of State Highway Officials who were convinced by tests and calculations that the maximum wheel load on solid tires which a concrete pavement having an 8" edge thickness could safely carry was 8,000#, and they accordingly recommended that axle loads be limited to 16,000# on vehicles equipped with solid tires and that such vehicles be limited to a speed of 10 miles per hour. They also noted that, in their opinion, vehicles equipped with pneumatic tires could carry 9,000# per wheel without increasing pavement stresses.

Since that time 34 states have adopted 18,000# as the maximum permissible axle load, although two states limit it to designated and especially designed highways as against 16,000# on other highways. In 1948, two states had no provisions limiting axle loads and 12 states prescribed limits in excess of 18,000#, the maximum being 22,400# in New Jersey, Connecticut, New York and Rhode Island, and a demand for increased axle load limitations may soon be expected in all state

Roads must be designed and constructed to carry the traffic they will accommodate, not only upon the day of their completion, but over the period of the foreseeable future as well, and highway design and construction should be in the hands of men of proven engineering ability and possessed of vision, courage, and judgment. Every penny saved in first cost may later require an extra dollar in maintenance. The cost of a pavement designed to carry a 16 ton axle load is not twice that required to carry an 8 ton load. It is reliably stated that a 50% increase in pavement strength can be obtained for a 20% increase in cost, and it is surely poor administrative judgment to permit heavy truck traffic on highways which were not designed to carry it, and where common sense alone would show that they would be destroyed or irreparably damaged by such traffic.

6. All modern pavements have a limited life. They deteriorate and wear out in time, and the perfect pavement has not yet been designed. It should be remembered that concrete lacks many qualities necessary to make it the ideal paving material. It is highly susceptible to climatic changes and conditions, it is inelastic and its strength and wearing qualities are dependent upon the use of proper aggregates, proper proportioning and proper construction methods, practice and inspection. The life of the ordinary concrete pavement, probably does not exceed 20 years. It is possible that the highway of the future will utilize other materials of construction when experience proves their adaptability. Asphalt may have further possibilities and even rubber, or a combination of asphalt and rubber, may prove the solution to the pavement surface problem. Experiments under way in Ohio, Virginia, and Minnesota would indicate they are practicable and that they would result in reduced cost of maintenance, less wear on both car and pavement resulting in greater riding comfort and resistance to skidding. A road test will be made in Idaho next year to study the effects of heavy truck traffic on bituminous pavements and pavements tested will vary in thickness from 6 to 22 inches.

The concrete slab is primarily a wearing surface and it is the supporting foundation that in large measure determines the strength and life of the pavement. Experience shows that it deserves more attention than it has received. Proper drainage is important and sand lifts have amply demonstrated their value. First cost is important but maintenance costs can soon overbalance any saving accomplished in false first cost economy. The future may well bring with it many changes in both vehicle and pavement design in the interest of both economy and utility, and while the need of an accelerated program is plainly indicated, it surely would be an act of wisdom at the present time, and for many reasons, to go slow before the state embarks on an overambitious new construction program.

It is interesting to note that the 118 mile New Jersey Turnpike, recently completed at a cost of approximately $255,000,000.00 has an asphaltic concrete pavement which was selected after exhaustive research and experimentation because of its greater resistance to contraction and expansion and its flexibility, and the fact that it will provide a surface texture that will furnish maximum practicable traction for fast moving rubber-tired vehicles and insure riding comfort. It is further interesting to note that this pavement is designed to carry 36,000 axle loads.

7. The need of advanced planning and scheduling of an established highway program is clearly indicated. Such planning and scheduling should be governed by a broad perspective and on a long-range basis and designed to meet all foreseeable needs and developments. The highway program as outlined by the state's Highway Advisory Committee in 1948 provides an excellent and admirable basis from which to proceed. Scheduling should be in accordance with a conservative estimate of the funds available and periodical reviews of the program should be made in order that it may be properly kept

up to date to meet changing conditions.

8. The preparation of uniform designs and technical standards and uniform contracts should receive careful attention and they should be used wherever possible. There is no need to make every bridge and culvert, etc. different across the state, since the objective should be to serve the state's best interest rather than to develop engineering talent.

9. Highways should be safer. The nation experienced 37,500 fatalities in 1951 due to highway accidents, an increase of 6,000 or 16% over the 1950 record. During 1951 highway fatalities in Nebraska numbered 339, an increase of 31 over the 1950 record, an increase of almost 10%. The nation's fatality rate in 1950 was 7½ deaths per 100 million miles of travel, while the corresponding rate in Nebraska was 6.6%. However in that year, there were 71 other highway accidents in the state to every one in which a fatality occurred, probably a near high national record. The number of highway fatalities in Nebraska in the year 1951 was the greatest of any year in the history of the state, a fact that should provoke alarm.

Nebraska's laws pertaining to traffic regulation should again be critically scrutinized and revised when the facts indicate a necessity. Uniform state laws are essential and as far as traffic regulation is concerned, state lines should be nothing more than lines on a map. Good engineering and education are vital, but the most modern highway can become a dangerous thoroughfare because of reckless driving and a knowledge of the law is of no effect if it is not obeyed.

The President of the National Safety Council, in commenting on the 410 deaths that occurred in the nation on a recent Labor Day, said, "A nation, posing as civilized, has just given one of the greatest peace time exhibition of mass indifference, recklessness and insatiable desire to show off the world has ever seen." The highways accident record is a national scandal.

10. It is recognized that spring, when the frost is coming out of the ground, is the time of year when heavy loads do the most damage to the highways. Some of the northern states post their highways at this time and prevent their use by heavy trucks, thus increasing the life of the pavement considerably by such postings. Nebraska has many miles of roads not designed to carry the loads they are not subjected to and is consequently faced with the alternative of keeping heavy traffic off these roads, or constructing them to increased standards. They should at least be protected from heavy spring damage, and their early destruction. (See Highway Research Board Publication entitled "Load Carrying Capacity of Roads as Affected by Frost Action.")

The Highway Department now has authority to post roads for reasonable periods only when a weakened condition results from frost action or saturated soil. It has no authority to post underdesigned roads against legal loads.

Posting of the highways during the spring thaw is mandatory rather than permissive in Michigan, Minnesota, and South Dakota. The Highway Department in Nebraska would be in far better position to protect the highways with a mandatory provision in the law.

CHAPTER VI

COMPARATIVE HIGHWAY COSTS

There have been some accusations in the past that Nebraska's Highway Department is inefficiently operated and that its construction and maintenance costs are excessive. Charges are easily made, but they should not be accepted as warranted until they are proved true. If charges against the Highway Department are not justified, then great harm has been done by their having created unfounded and unhealthy suspicion in the public mind, resulting in loss of confidence; and on the other hand, if the charges are justified, corrective measures should be promptly undertaken.

In an attempt to arrive at the facts in the matter, the following data have been assembled:

A natural division in considering highway costs would be to consider actual construction and maintenance costs and administrative and supervisory costs as separate items, and they will be so considered in the following analysis:

The question as to how much it costs to build a mile of road is impossible of a direct simple answer. It is similar to the question, "How much does it cost to build a house?" or in a lighter vein, "How long is a piece of string?" and while the layman is inclined to make comparison of costs on a per-mile basis, a true comparison cannot be made in this way, since no two miles of road are exactly the same. The variations which affect costs, may be summarized as follows:

1. One road may be a four-lane highway, whereas another has only two lanes.

2. One two-lane highway may be twenty-four feet in width with ample shoulders, whereas another may be only eighteen or twenty feet in width with narrower shoulders.

3. One road may be surfaced with reinforced concrete, whereas another is surfaced with bituminous material, gravel or clay.

4. Where roads are surfaced with the same material, one may be designed to carry a greater density in weight of traffic than another, and hence will have a thicker surface of concrete, bituminous material, etc.

5. One road may be built to higher standards of safety and convenience than another, including the elimination of crossings, sharp curves, steep grades, etc., thus adding greatly to the cost.

6. The difference of soil and climate may require much greater attention to foundations or sub-surface materials, drainage, etc., on one road than would be required on another.

7. Even where roads are built to the same general standards the difference in terrain would account for great differences in construction costs. One road may be built in an area requiring relatively little excavation and moving of rock and dirt and relatively few culverts and bridges, whereas another road may require cuts, fills, tunnels, blasting through rock formations, the construction of many bridges and culverts, etc.

Because of the differences enumerated above, it is meaningless to compare costs per mile. A better comparison, however, can be made on the basis of unit costs, based on such units as are used in obtaining bids and the awarding of contracts--that is, the cost of excavation per cubic yard, the cost of structural steel reinforcement per pound, etc. The U. S. Bureau of Public Roads has compiled statistics on the average bid prices per unit in the several states for contracts awarded in 1949 on roads constructed in part by federal aid. These unit costs for Nebraska and the surrounding states were as follows:

Item	Nebraska	Kansas	Iowa	Missouri	So.Dak.	Wyoming	Colorad
Roadway Excavation Per Cu.Yd.	21¢	25¢	20¢	40¢	20¢	32¢	59¢
Structural Excavation Per Cu.Yd.	$2.58	$2.47	$2.41	$2.91	$3.60	$3.87	___
Structural Steel Reinforcement Per Lb.	12.4¢	10.8¢	11.4¢	11.1¢	12.4¢	12.6¢	11.6¢
Structural Steel Bridges Per Lb.	14.5¢	13.6¢	13.7¢	14.0¢	13.6¢	14.5¢	13.6¢
Base Course in Place: Gravel and Clay Gravel Per Ton	.77¢	$1.60	.93¢	$2.40	$1.31	$1.10	$1.20
Gravel and Clay Gravel Surface Course Per Sq. Yd.	.11¢	8¢	9¢	13¢	12¢	12¢	13¢

(Table continued on following page)

Item	Nebraska	Kansas	Iowa	Missouri	So.Dak.	Wyoming	Colorado
Bituminous Road Mix-Aggregate in Place-Per Ton	$2.86	$2.46	____	$4.05	$2.86	$2.48	$2.70
Bituminous Concrete (Hot Mix) Per Sq.Yd.	85¢	$1.06	$1.23	$1.42	____	____	____
Culvert Pipe 24" Galvanized Iron Per Linear Ft.	$4.15	$4.16	$4.05	$4.64	$4.84	$4.71	$5.04
Structural Concrete Superstructure Per Cu.Yd.	$54.06	$48.35	$44.81	$58.16	$52.46	$49.95	$53.58
Concrete Pavement Per Sq. Yd.	$3.14	$3.15	$2.95	$3.24	$4.41	____	$3.50

The figures in the foregoing table are for 1949. In an effort to secure more recent information, a letter was directed to the Bureau of Public Roads. In reply, the Bureau submitted the following comparison of unit costs in Nebraska with average costs in the four-state area consisting of Iowa, Kansas, Missouri, and Nebraska, for the calendar year 1950.[1]

Item	Unit	Nebraska	4-State Average
Borrow	Cu. Yd.	$0.50	$0.39
Unclassified Excavation	Cu. Yd.	0.18	0.19
Uncl. Structural Excav.	Cu. Yd.	2.20	2.40
Reinf. Steel for Structures	Lb.	0.118	0.106
Structural Steel	Lb.	0.139	0.133
Gravel Base (in place)	Ton	1.65	1.65
Gravel Surfacing (in place)	Ton	1.37	1.20
P. C. Concrete Pavement	Sq. Yd.	3.12	3.30
Bit. Road Mix Surface	Sq. Yd.-In.[2]	0.207	0.202
Bit. Concrete Surface	Sq. Yd.-In.[2]	0.437	0.347
Asphalt	Gal.	0.11	0.10
Concrete Pipe, 24-in.	Lin. Ft.	4.27	4.12
Galv. Pipe, 24-in.	Lin. Ft.	4.27	4.13
Structural Concrete			
Substructure	Cu. Yd.	50.44	47.87
Superstructure	Cu. Yd.	44.78	40.89

1): Letter from Thomas H. MacDonald, Commissioner of Public Roads, August 24, 1951.
2): Unit prices reduced to square yard-inch basis for comparison purposes, i.e., a unit one square yard in area and one inch thick.

In transmitting this information, the Commissioner of Public Roads offered the following comments: "Unit costs in Nebraska follow very closely the averages for the states comprising our Division 5 South.... In some instances, these unit prices are slightly above the average and in some slightly below, but in no instance is the departure such as to require special explanation.... Nebraska has a serious lack of high-grade aggregates for either concrete or bituminous road construction. It has long been my belief that it would be desirable for the state to make provision for bringing in high-grade aggregates from sources outside the state."

Although unit costs are considered far more significant for purposes of comparison than are costs per mile, great caution must be used in employing figures of this nature, since unit costs as well as costs per mile may vary greatly with local circumstances. Some of the factors influencing unit costs are as follows:

1. The nature of the soil and terrain in which the excavation is done may influence the excavation cost per cubic yard.

2. A considerable portion of Nebraska's increased cost in many of the unit costs noted, is due to the higher freight rates applicable in the state.

3. Proximity to sources of sand, gravel and other materials used will determine the length of haul and will materially influence the cost.

4. The cost of concrete pavement will be less per cubic yard for wide, thick pavement.

5. The costs listed as being the 1950 average are based on only 4 of the 7 states listed in the table showing the 1949 costs, and the 4 states considered are Nebraska, Iowa, Kansas, and Missouri. The delivered cost of some important materials, notably steel and cement, is lower in Iowa, Missouri, and some parts of Kansas, than it is in Nebraska, and it is evident that if Colorado, Wyoming, and South Dakota, where conditions are more nearly similar to those in Nebraska, had been included, the average costs as shown for 1950 would have been considerably higher.

It can be noted, for what it may be worth, that the report of the United States Bureau of Public Roads for the period June 30, 1950, to June 30, 1951, shows Nebraska's average cost per mile of road completed in that period as $37,200.00 which is less than the average cost per mile for construction it reports for Colorado, Iowa, Kansas, Minnesota, or Missouri. It is slightly more than the average cost reported for South and North Dakota. The report was based on all projects completed in the period and included those on secondary roads in rural districts which received (a) Federal Aid Secondary, (b) Grade Crossing, (c) Emergency Highway, (e) Defense Highway Act or (f) 1950 Access Funds. In the case of Nebraska, it included projects in which $1,128,000.00 of federal aid secondary funds were matched with

emergency funds raised to replace bridges destroyed in the 1947 and 1949 floods. Eight of which projects completed in 1950 involved the building of 3.9 miles of road which averaged a cost of $221,984.00 per mile and materially increased Nebraska's average cost per mile as noted in the Bureau's report.

The following paragraph is quoted from a letter received from the Kansas State Highway Engineer:

"We have had a better reputation than is deserved on the average cost per mile on secondary projects. During the postwar period, approximately 2,000 miles have been graded and drained, replacing needed structures under 20 feet in length. Some 6,000 miles have been surfaced. The difference between the grading and surfacing is accounted for because many of the counties have graded and drained their roads, using their own funds and have used federal funds for surfacing only. In many instances, needed bridges have not been constructed at the same time the projects were graded. Some 280 bridges of various lengths, all over 20 feet and averaging from 75 to 100 feet have been constructed at a cost of about 5 million dollars. In some instances, there has been no grading in connection with the bridge projects. Most of the grading and surfacing work has been constructed to fairly low standards. A large part of the surfacing has been of light type using some 600 to 800 cubic yards per mile of sand,gravel,or crushed rock. The average cost per mile for this kind of surfacing is approximately $1,500.00. The average cost of grading and culverts is around $5,000.00 per mile."

It is even more difficult to make a true comparison of the administrative and supervisory costs of the highway departments of the different states than it is of their construction costs. The only practical method would appear to be to compare such costs as a percentage of the total funds expended. Such a comparison will not be entirely conclusive, since the percentage of administrative cost would naturally decrease as the amount of total expenditure increases. In other words, we would expect that the administrative expense of a department having a small total expenditure would be a larger percentage of total expenditure than it would be in the case of the highway department having a large total expenditure.

The following table presents a breakdown of highway department administrative costs for the year 1949, prepared on a percentage basis, and covering Nebraska and the surrounding states and the average percentage costs of all states. It was prepared from information taken from Highway Statistics 1949, as published by the Department of Commerce:

(See Table on Following Page)

	Iowa	Missouri	Kansas	Colorado	Wyoming	South Dakota	Nebraska	Average of all States
Administration - Engr. & Misc.	2.8	5.0	4.7	6.9	2.5	3.7	5.4	5.7
Maintenance	26.8	27.2	25.6	13.5	22.0	34.7	37.2	23.9
New Construction	66.3	60.0	67.9	73.8	73.3	60.7	54.4	64.9
Highway Patrol	3.5	3.8	1.8	4.7	2.0	0.9	3.0	3.6
Interest on Obligations	0.6	4.0	0.0	1.1	0.2	0.0	0.0	1.9
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

It should be noted that all items in the table are not directly comparable because of variations in accounting procedure and in the degree of responsibility for maintenance expense.

Statistics published by the Bureau of Roads indicate that administrative expense accounted for 5.6% of the total expenditure made by the nation on highways during the year 1949 and later figures were not available.

The item of administrative expense in the case of Nebraska, shown as being 5.4% of the total expenditure, is further broken down as follows:

Administration and Engineering	1.7 per cent
Planning and Research	0.7 per cent
Land and Buildings	1.1 per cent
Deficiency Claims Suspense and Undistributed Costs	1.9 per cent
Total	5.4 per cent

It will be noted that 56% of Nebraska's Highway Department administrative expense was due to lands and buildings, deficiency claims, suspense and undistributed costs. The cost of the departmental building erected in 1949 unduly increased the building cost that year, and is an item of expense that will not occur in like percentage in after years, and the items of deficiency claims and suspense are not included as administrative expense in some of the other states. Even with these unbalanced distributions, administrative costs in Nebraska were lower than in Colorado and lower than the average of all the states. The cost of administration and engineering, planning, and research in Nebraska, which are the cost items under discussion, amounts to about 2.4% of the department's total expense. It is exceptionally low and will bear favorable comparison with like costs in any state of the Union.

The figures listed in the table fix Iowa's administrative cost for the year 1949 as 2.8% of the total expenditure as against 5.4% for Nebraska. However, a letter from the Chief Engineer of Iowa's Highway Department states that he cannot correlate this figure with any of his own statistics. He further states that for the fiscal year ending June 30, 1951, Iowa's administrative expense amounted to 3.44% of its total highway expenditure, and that included in this expense were the items of administrative and engineering, planning and research, and land and buildings; which items in the case of Nebraska for the year 1949 amounted to 3.5%. He notes that, based on his forty years of experience with Iowa's Highway Commission, during which time he has been closely in touch with Nebraska's Highway Department, there has been but little difference percentage-wise in administrative costs in Iowa and Nebraska.

A study of the data herein contained would clearly indicate that construction and administrative costs in Nebraska are in line with like costs in surrounding states and that they compare very favorably with the average unit costs of all of the states of the Union. The data furnished is surely sufficient to refute current charges of inefficiency and excessive costs.

CHAPTER VII

SUGGESTED CONCLUSIONS AND RECOMMENDATIONS

The committee, after careful consideration of the information herein contained and other facts in hand, would now present to the Legislature its conclusions and recommendations in the matters assigned to it for study and consideration.

Chapter I. Trucks and Our Highways - Pages 8 to 17.

No further comments or recommendations.

Chapter II. Motor Vehicle Taxation - Pages 18 to 53.

1. Notwithstanding the fact that in 1950 the voters of Nebraska indicated by their repeal of L.B. 399 and L.B. 401 that they were not in favor of an accelerated road program, since these measures would have provided funds for that purpose in the amount of approximately five million dollars a year in excess of that available from present tax measures, there are indications that a majority of the voters of the state now appreciate the state's predicament and problems, and would favor these bills should they have an opportunity to express their opinion again, and since a careful study of the state's needs fully justifies the belief that there is definite and urgent need for additional revenue for an accelerated road program, your committee recommends to the Legislature that it re-enact, for a two-year period, legislation similar to L.B. 399 and L.B. 401.

2. The committee suggests to the Legislature that it petition Congress by means of a suitable resolution that the federal government withdraw from the field of gasoline taxation and leave it to the states, and that copies of the resolution be sent to all other state legislatures asking for their aggressive support and adoption of similar resolutions.

3. A study of the property taxes now charged against motor vehicles leads to a conviction that such taxes are excessive and unjust, since they are based on an appraised value considerably nearer their full value than is the practice in assessing other personal property, and it is difficult to see why the motor vehicle owner should pay not only the state's full cost of the highways, but in addition be required to contribute in greater proportion to the expense of other governmental activities than owners of other property of equal value. It would appear desirable that property tax rates on motor vehicles should either be reduced in order to lessen the tax load on the owner or that a large portion of the revenue produced by the tax be allocated to highway purposes, and the committee recommends that the Legislature consider legislation to effect one or the other of these two ends. Apparently, however, any change in the property tax as applied to motor vehicles would require an amendment to the State Constitution.[1]

4. Most country county roads render their greatest service to the residents of the county and it would appear logical that such special facilities as they may require, be provided and administered by the county rather than by the state, and the state's highway program could be greatly expedited by the counties assuming greater initiative and responsibility, taking full advantage of federal aid under the Farm-to-Market Program. In the case of counties unable to undertake by themselves a comprehensive program, consideration might be given to a plan by which several counties could cooperate in pooling their resources in the establishment of road districts, similar to the power

1): A proposed amendment which would authorize the Legislature to establish a different system of taxation for motor vehicles will be submitted to the electorate in November, 1952.

[illegible] The committee appeared to the legislature [illegible] [illegible] Delegates be [illegible] of a [illegible] [illegible] the federal government without [illegible] [illegible] [illegible]

districts now in operation. If legislation to permit the formation of such districts is necessary, it should receive the favorable consideration of the Legislature.

Chapter III. The Ton-Mile Tax - Pages 54 to 66

No additional comments or recommendations.

Chapter IV. Toll Roads - Pages 67 to 81.

The committee is of the opinion that the matter of toll roads in Nebraska is not one requiring attention or extended consideration at the present time. It is also of the opinion that legislation, if offered, permitting the construction of toll roads to be financed entirely by revenues derived from the operation of such roads would not be harmful. It was decidedly of the opinion that no legislation should be considered that would divert funds now available for free highway construction to the purpose of financing toll roads, and that in no case should the credit of the state be pledged for the purpose of guaranteeing toll highway bonds.

It was of the opinion that, if toll road legislation is offered, such legislation should contain provisions for representation upon the governing authority of the governor, or representation from the Highway Department, or preferably, both.

Chapter V. The Nebraska Department of Roads and Irrigation - Pages 82 to 99.

1. The committee finds that no major criticism of the Highway Department, as it is now organized or operated, can be justified and offers no suggestion as to its improvement other than those noted herewith.

2. The committee is of the opinion that some simplification of the Highway Department's organization chart might perhaps well be made, by combining under one head a number of the Department's present divisions, thus achieving greater concentration of administrative control in the interest of increased coordination. Such changes, if found desirable, can be made by the Highway Department without further legislation.

3. The committee is of the opinion that separation from the Highway Department of the present divisions of Motor Vehicles, the Bureau of Irrigation, and the Highway Patrol, presents some practicable advantages. However, such separation is not of an emergency nature and should not be effected without further study

and the recommendation of competent authority. There are only 12 full-time employees at the present time in the Bureau of Irrigation--surely not a number to warrant its being set up as a separate department or to justify a hope that such a separation would effect appreciable economies.

4. The committee earnestly recommends that arrangements be made for a yearly audit of the Highway Department, preferably by the state auditor. The last biennium appropriation for this purpose was in the amount of $4,000 which was insufficient.

5. As a first step in arriving at a logical solution to the highway problem, the committee suggests that the Legislature

A. Direct the governor to immediately appoint a highway committee to consist of 8 members, one from each of the districts in which the Department of Roads and Irrigation now maintains a district engineer and that it appropriate a sum sufficient to enable the committee to carry out its purpose. If an odd number of members is considered advisable, the governor or state engineer could act as chairman; otherwise the board to perfect its own organization, the committee to have two assignments:

1. To prepare and submit to the Legislature for its approval and adoption, a layout showing Nebraska's accepted and ultimate system of highways.

2. Determine and present the order, by route number, in which construction or reconstruction included in the plan should prevail, priority to be based on a scientific rating system.

B. After completion of these two assignments, and the presentation of their findings to the Legislature, the committee to be discharged.

C. After adoption by the Legislature of a completed state highway plan and the method of determining priority, no changes or additions to be made without approval of the Legislature.

It is believed that such a procedure would provide the advantages that could be obtained by a permanent highway commission without its many disadvantages. It would remove the pressure continually put upon the governor and the Highway Department and present a basis upon which to erect a logical motor vehicle tax structure.

6. Under Nebraska's present practice of assessing fines for overloading, the operator can in many cases pay the fine and still show a profit on the overload. An effective way to stop overloading would be to take the profit out of it. In 1951, the Illinois Legislature enacted legislation with this end in view. Briefly, the law provides that whenever a commercial vehicle owner has been convicted ten times in any year for weight violation, he is denied the right to operate <u>any</u> vehicle on the highways for 90 days. If, after such conviction, he again breaks the law, the second suspension period is for one year. The penalty for a private individual for operation during a suspension period is imprisonment for not less than 10 days and a permissible fine in addition of not more than $500, and in the case of a corporation, a fine of not less than $1,000. The law, in the short time it has been in effect, appears to be effectually accomplishing its purpose. The committee would recommend that the Legislature consider similar legislation for the State of Nebraska.

7. Since most of the fees collected at the ports of entry are based upon use made of the highways, it would appear logical that the revenue derived should accrue to the benefit of the highways. Part of the fees collected are now credited to the Highway Department and the part credited directly to the Agricultural Department is greatly in excess of its actual expense. (See Ports of Entry, Page 24.) It is recommended that all such fees be directly credited to the Highway Department and that the Department of Agriculture and Inspection operate the ports of entry on a budget appropriation chargeable to the Highway Department, and that any unexpended balances in this appropriation be credited back to the Highway Department.

8. Excessive motor vehicle speed on the highways is dangerous and the laws of the state have for many years established maximum legal speed restrictions. Now, however, with the great increase in highway traffic, the slow-moving vehicle also presents a highway menace and many states have enacted laws requiring slow-moving vehicles to yield the right-of-way to normal traffic. The committee suggests that Nebraska give consideration to such legislation.

The laws of Nebraska pertaining to the state highway system have grown in a haphazard fashion over a long period of time and have never been completely codified. Some of these laws provide for or authorize the construction of highways that have never been constructed or are not maintained by the state. Some are obsolete, as they refer to funds or duties of the Department of Roads and Irrigation which have not existed for many years. Others are duplicating, conflicting, or ambiguous. Some grant extensive authority to the department, whereas others unduly restrict it in its operations. One example of this confusion may be found in a comparison of the highway mileage which the Legislature has authorized with the mileage actually maintained by the Department of Roads and Irrigation as of January 1, 1952.

Authorizations		Maintained	
Federal-Aid Primary	5,423.6 miles	Federal-Aid Primary	5,107.1 miles
Federal-Aid Secondary	10,485.8 miles	Federal-Aid Secondary	4,069.3 miles
Federal-Aid Urban	139.7 miles	Federal-Aid Urban	98.0 miles
Legislative routes	11,142.0 miles	Non-Federal-Aid	384.3 miles
State line connections	150.0 miles		
Connections to cities and villages	? miles		
Connections to state institutions	? miles		
Total	? miles	Total	9,658.7 miles

Most of the legislative routes referred to above coincide with either federal-aid primary or federal-aid secondary routes. State line connections, possible connections with cities and villages and connections with state institutions may or may not be on the primary or secondary systems. Under present federal laws, the maximum extent of the federal-aid primary system in Nebraska is 5,619.04 miles. The federal-aid urban system may be changed as urban population changes. Federal law does not set definite limits to the federal-aid secondary system and it may be enlarged by action initiated by county officials. It is possible that this system may grow to include 20,000 to 30,000 miles of road in Nebraska.

The 384.3 miles of non-federal-aid highways shown above as being now maintained by the state includes 265.2 miles that parallel and serve federal-aid routes. Of the 265.2 miles, 206.9 miles serve federal-aid primary routes not yet constructed, and 58.3 miles serve federal-aid secondary routes not yet constructed. Thus the department is maintaining 119.1 miles of highway routes that are not now eligible for federal aid in financing their reconstruction.

The highway laws of the state are in need of a general revision or recodification, but this probably cannot be accomplished at the 1953 legislative session. There are a number of specific changes, however, which are

more important and should be made during the coming session. Some of the inadequacies of the present laws are as follows:

1. The statutes do not accurately define the extent of the state highway system. Section 39-601 was intended to define this system but repeated amendments have added new routes to the highway system. Another amendment, vetoed by the governor, would have added greatly to the number of miles in the system. As it now stands, this section describes 283 specific legislative routes totaling about 11,142 miles. It also authorizes the Department of Roads and Irrigation to "lay out additional highways not to exceed 150 miles, to make connections at state lines or to fill in gaps and make complete otherwise continuous routes."

2. Section 39-601 also authorizes the department to construct the "federal" highway system and directs it to give preference to the construction of "federal" highways. At the time this law was passed, the only "federal" system was the one now known as the federal-aid primary system. In addition to this primary system, however, we now have federal-aid secondary, federal-aid urban, and federal-aid interstate systems.

3. Section 39-601 provides that "Where any state highway runs not more than two miles from the limits of any incorporated city or village which is not located on any state highway or not more than three miles from any village having a population of 50 or more where a United States post office is located, and which is not on a state highway, or within six miles of any incorporated village not served by railroad, the Department of Roads and Irrigation is authorized to and in its discretion may build a connecting highway to such incorporated city, village or post office."

4. Section 83-137, passed in 1919, provides for the building of connecting highways to certain state institutions. This section, together with others cited, leaves some uncertainty as to the responsibility for the construction of state highways within cities and villages.

5. Section 39-604 was intended to outline the roads to be maintained by the department, but it also affects the duties of the department pertaining to reconstruction work. When a road is taken over for purposes of maintenance, the department necessarily assumes the responsibility for further reconstruction. Prior to 1949, Section 39-604 directed the department to maintain any road built in whole or in part <u>with federal funds</u>. In 1949, however, this was amended so as to provide that the department shall maintain any highways built "for which actual physical construction costs are paid for, either in whole or in part, <u>with state funds</u> appropriated for highway purposes which are constructed under the exclusive direction of the department."

6. While Section 39-601 designated 283 routes as state highways, it provided that certain of them should not be maintained until built. Section

[illegible] made during the [illegible] session. [illegible] of the [illegible] was as follows:

[illegible] Editors do not necessarily believe the opinions of the above [illegible]

Section 39-601 was [illegible] to [illegible] [illegible] months have added new [illegible] to the highway system. Though [illegible] proposed by the governor, would have added [illegible] to the system. As it now reads, this section [illegible] [illegible] miles totaling about 11,142 miles. It also [illegible] [illegible] and Legislation to "by one additional [illegible] [illegible]

Section 39-601 also authorizes the department to [illegible] [illegible] highway system and thereby [illegible] to the [illegible] "federal" highways. At the time this was passed, the only [illegible] system was the one now known as the Federal-Aid [illegible] to form primary routes, however, as you have [illegible] [illegible]

[illegible] the miles from the life of any incorporated city or village [illegible] not located on any state highway or for more than [illegible] miles. [illegible] any village having a population of 50 or more [illegible] [illegible] office is located, and which is not on a route [illegible], or within [illegible] any incorporated village not served by railroad, the [illegible] and Legislation is authorized to [illegible] in the [illegible] [illegible] highway to such incorporated city, village or town [illegible]

Section 39-1[illegible], passed in 1[illegible], [illegible] [illegible] [illegible] to control state [illegible], [illegible] [illegible] called, [illegible] [illegible] [illegible] of state highways within cities and villages.

Section 39-604 was intended to outline the [illegible] [illegible] department, but it also [illegible] the [illegible] [illegible] reconstruction work. When a road is taken over [illegible] [illegible] the department necessarily assumes the responsibility for the [illegible] [illegible]. Prior to 1[illegible], section [illegible] [illegible] any road built in whole or in part [illegible] [illegible] [illegible], this was amended so as to provide that the [illegible] [illegible] highways built for which [illegible] [illegible] either in whole or in part. [illegible] [illegible] [illegible] which are constructed under the [illegible] [illegible] [illegible]

[illegible] Section 39-601 designated [illegible] roads as state highways. [illegible] [illegible] of these roads, and be [illegible] [illegible] [illegible]

39-604, however, prescribes that the Department of Roads and Irrigation shall "maintain the whole of the state highway system."

7. Section 39-604 outlines the responsibilities of cities and villages and of the Department of Roads and Irrigation for maintaining state highways within the incorporated communities of less than 25,000 population, but makes no provision for the maintenance of such highways within cities of more than 25,000 population, though there are certain responsibilities for maintenance in the larger cities which the department cannot ignore. In cities of 2,500 to 25,000 population, part of the cost of maintenance is divided between the cities and the department, but no mention is made of the responsibility or authority for the handling of maintenance problems which are not financial in nature.

The Department of Roads and Irrigation should be responsible for constructing and maintaining the main traffic arteries of the state which carry the bulk of the farm-to-market traffic, the commercial and industrial traffic, and that of the ordinary motorist. In general, the state highways should be those roads which carry the heaviest volume of traffic, but they should be selected in such a manner as to provide a completely integrated state-wide network of roads. The state highway system should include only those routes that are of interstate, state-wide, or at least intercounty importance. It should not include the stubs and spurs that are used by only a few local vehicles.

Chapter VI. Comparative Costs - Pages 100 to 106.

This chapter, it is believed, refutes the charges of extravagance and inefficiency that have been directed against the Highway Department, and no further comments or recommendations are offered.

Conclusion

In the preparation of this report, the committee has been greatly dependent upon the reports of other similar committees and the publications of recognized authorities. A partial list of the publications to which the committee has had access follows, and the committee would acknowledge its indebtedness and appreciation to their authors and publishers:

(See List on Following Page)

1. The Report of the Wisconsin Legislative Council, Advisory Committee on Highways, 1950.

2. The Article "Toll Roads--Are They Justified?" contained in the August 1950 issue of Civil Engineering.

3. Nebraska Highway Needs, an engineering appraisal prepared under the direction of the Nebraska Highway Advisory Committee in 1948.

4. Highway Safety--Motor Truck Regulation, and other publications of the Council of State Governments.

5. Reports and other publications of the Nebraska Department of Roads and Irrigation.

6. The Ton-Mile Tax and Related "Third Structure" Taxes, An Analysis of the Highway Program, Proceedings of the Third Highway Transportation Congress, The Farmer's Road Problem, and other publications of the National Highway Users Conference.

7. An Article by R. W. Meadows and S. F. Brelak appearing in the June 1950 issue of Public Roads published by the Bureau of Roads.

8. "Highway Finance in New York," by Griffenhagen and Associates.

9. Report of the Joint Legislative Committee on State Fiscal Policies, New York Highway Department.

10. "Suggested Approaches to the Problem of Highway Taxation," by G. P. St. Clair, published in the 1947 proceedings, Vol. 27 of the Highway Research Board.

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Respectfully submitted,

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